American Journal of Public Health
and THE NATION'S HEALTH

Volume 36 May, 1946 Number 5

Acute Respiratory Disease Among New Recruits*†

Commission on Acute Respiratory Diseases ‡

IT has long been recognized in the armed forces that new recruits experience an unusually high incidence of hospital admissions for respiratory diseases in contrast to seasoned men.[1] Although numerous factors have been considered to be important in causing this phenomenon, there has been a paucity of quantitative data by which these factors could be evaluated.

Studies of the Commission on Acute Respiratory Diseases at Fort Bragg, North Carolina, during the winter of 1942–1943[2] revealed that sharply defined epidemics of undifferentiated respiratory disease occurred with great regularity among newly inducted soldiers. Similar epidemics were not observed among seasoned men. These studies have now been extended to include observations over a period of two and one-half years. The incidence of respiratory diseases, as measured by hospitalized cases, has conformed to a characteristic epidemiological pattern, which helps to define the problem. In the present paper, the salient features of this pattern will be described and its implications regarding the nature of these diseases and the factors which influence their occurrence will be discussed.

SOURCE OF DATA

The studies began in October, 1942, and have continued through 1945. Consistently throughout this period acute undifferentiated respiratory disease of unknown etiology has comprised the great majority of the hospitalized cases of respiratory disease, except during an epidemic of influenza A in December, 1943. Primary atypical pneumonia has been continuously pres-

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† This investigation was supported through the Commission on Acute Respiratory Diseases, Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army, Preventive Medicine Service, Office of the Surgeon General, United States Army, and by grants from the Commonwealth Fund, the W. K. Kellogg Foundation, the John and Mary R. Markle Foundation, and the International Health Division of the Rockefeller Foundation to the Board for the Investigation and Control of Influenza and Other Epidemic Diseases for the Commission on Acute Respiratory Diseases.

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ent in moderate incidence amounting roughly to 10 per cent of the respiratory admissions. These cases have been widely distributed throughout the post. Acute bacterial infections, such as hemolytic streptococcal pharyngitis and pneumococcal pneumonia have been sporadic and infrequent.[3-6] At no time have they contributed significantly to the level of the incidence rates for total respiratory disease.

The data reported in this paper have been obtained largely by tabulating the daily admissions to the respiratory wards, without attempting to separate these cases into diagnostic groups. Thus the figures are based on the initial impression at the time of admission that the patients were suffering from some form of respiratory disease. Repeated checks of this rather rough method of measuring incidence have revealed a 90 per cent or greater accuracy, when compared with the final diagnoses made at the time of disposition. Because diseases of known etiology have been infrequent, this method of counting total respiratory admissions provides a reasonably accurate measure of the incidence of acute undifferentiated respiratory disease. For convenience this group of illnesses of unknown etiology will be referred to by the contraction "ARD."

In addition to the data based on total respiratory admissions, certain other studies will be reported which serve to emphasize the main points derived from the broad scale data. These studies have been based either on final diagnoses of hospital cases, or on the results of detailed clinical, epidemiological, and laboratory investigations of selected organizations.

The organization in which most of the studies of new recruits have been made is the Field Artillery Replacement Training Center (FA-RTC). The trainees enter the FA-RTC directly from reception centers in all parts of the United States. With few exceptions the men have had less than one month of military experience prior to their arrival, and the majority have been in the army less than 10 days. Most of the men arrive in groups of 1,000 and form a battalion which is divided into batteries of 250 men. A varying number of battalions, from 5 to more than 12, have been under observation.

The courses of basic training have varied. In 1942 and early in 1943 they were 6, 8, or 13 weeks in duration. Since the late summer of 1943, however, all courses of training have lasted for 17 weeks. Upon completion of training, the men are transferred to other stations and a new group of trainees is brought in. Thus, throughout the period of study there has been a staggered flow of large groups of trainees through the FA-RTC. This movement of troops provides a basis for continuing epidemiological studies which in many ways resemble the techniques which have been used in experimental epidemiological studies in animal colonies.

The other organizations at Fort Bragg comprise a wide variety of tactical and service units which are composed largely of well seasoned men.* Many of these units have been under observation for 6 months or longer. Some of them have received small complements of new recruits from time to time. This was particularly true during the winter of 1942–1943.

INCIDENCE OF ACUTE RESPIRATORY DISEASE IN NEW RECRUITS AND SEASONED MEN

The weekly incidence rates of respiratory admissions in the FA-RTC and

* A large majority of the seasoned men were members of combat Divisions and Field Artillery Battalions who were undergoing active field training similar to or more intensive than that being given to the new recruits in the FA-RTC. Only a small proportion of the men included among "other organizations" were service troops of the Station Complement.

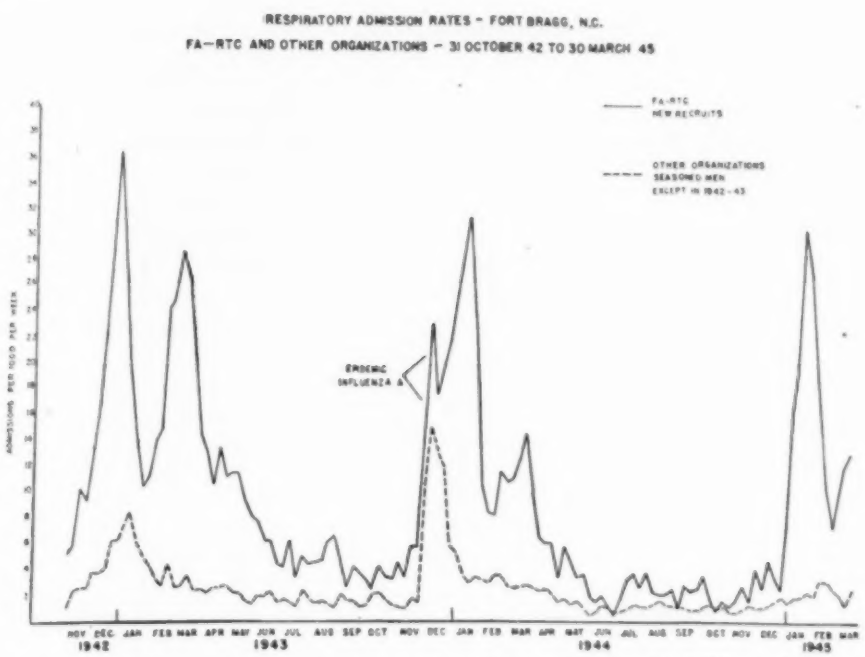
RESPIRATORY ADMISSION RATES - FORT BRAGG, N.C.
FA—RTC AND OTHER ORGANIZATIONS - 31 OCTOBER 42 TO 30 MARCH 45
FA-RTC NEW RECRUITS
OTHER ORGANIZATIONS SEASONED MEN EXCEPT IN 1942-43
ADMISSIONS PER 1000 PER WEEK
EPIDEMIC INFLUENZA A
NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR
1942
1943
1944
1945

FIGURE 1—Respiratory Admission Rates, Fort Bragg, N. C., FA-RTC, and Other Organizations, October 31, 1942, to March 30, 1945

from the other organizations stationed at Fort Bragg are shown in Figure 1, from October, 1942, to March, 1945. Throughout this entire period the new recruits in the FA-RTC have experienced a consistently higher incidence of ARD than the seasoned men. During the summer the difference has been small, approximating a ratio of 2 to 1 or less. In the winter, the ratio has been as great as 10 to 1, or more. A sharp rise in respiratory admissions has occurred in December or early January, reached a peak, and then rapidly subsided in the course of 5 to 6 weeks. During this period recruits, in various stages of training, have been affected. Subsequent to this first wave secondary waves have appeared each year. These secondary waves have been determined solely by the rate of arrival of new trainees. In February and March, 1943, the secondary wave was severe because a large number of new recruits entered the FA-RTC at this time. In 1944 and 1945 the secondary peaks were lower because the movement of new recruits was proportionately reduced, due to the lengthening of the training period.

In the other organizations, composed largely of seasoned men, the incidence of admissions has remained constantly low with only 2 exceptions. Moderate increases were observed in the winter of 1942–1943. These were the result, in large part, of the addition of complements of new recruits to organizations of seasoned men. During December, 1943, the influenza A epidemic affected both new recruits and seasoned men in approximately equal severity, but with the subsidence of this epidemic the rates among the units of seasoned troops fell to a low level and remained low throughout the rest of the winter.

In the winter of 1944–1945 an increase among seasoned men was barely perceptible. No epidemics of specific infections were recognized and prac-

tically no complements of seasoned men were added to these tactical organizations during this winter.

This difference in incidence of respiratory admissions between the FA-RTC and the other organizations may be due in part to varying criteria for admission to the hospital. In the FA-RTC the principal criterion has been the presence of a fever of 100 degrees or more, while in some, but not all, of the other organizations, a somewhat higher fever has been the indication for hospitalization. This difference might possibly account for the 2 to 1 ratio observed in the FA-RTC during the summertime; but it does not explain the 10 to 1 difference during the winter because during the epidemic of influenza A the incidence of admissions among the two types of soldiers was approximately equal. Furthermore, varying criteria of admission do not explain the high incidence observed among the complements of new recruits which have been added to seasoned organizations, because under these conditions both new recruits and seasoned men received medical care in the same dispensaries.

The curve of respiratory admission rates in the FA-RTC represents a composite of the experience of many battalions. Each battalion of new recruits has followed a characteristic pattern which varies with the season. During the winter a battalion of newly arrived recruits experiences a sharply defined epidemic of 3 to 4 weeks' duration. A typical example is shown in Figure 2. During the first week after arrival, the rates are usually moderately elevated. They increase sharply to a peak in the second or third week, and then rapidly subside, following which the rates re-

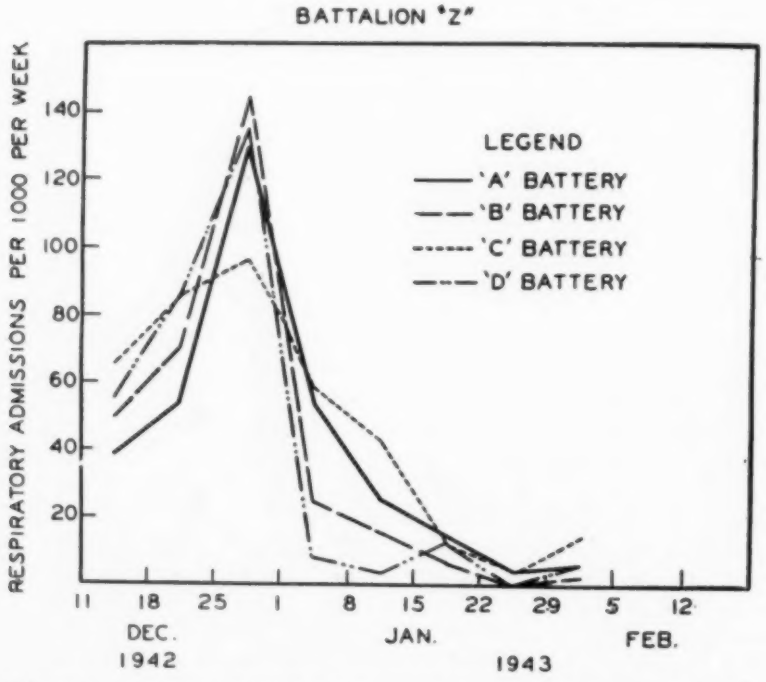

FIGURE 2—Respiratory Admission Rates per 1,000 per Week, Among Batteries of a Battalion of New Recruits, FA-RTC, December 12, 1942, to February 5, 1943

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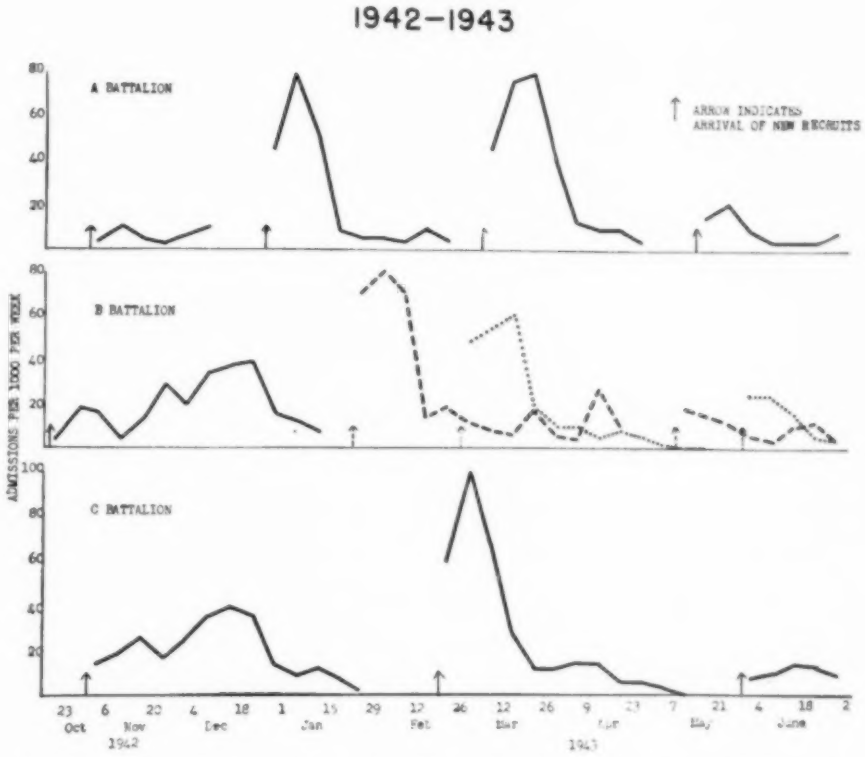

FIGURE 3—Respiratory Admission Rates per 1,000 per Week. Three Representative Battalions, FA-RTC, October 17, 1942, to July 2, 1943

main consistently low. From 15 to 30 per cent of the total strength may be admitted to the hospital within the first 4 weeks.

The consistency with which these epidemics occurred during the winter of 1942–1943 is shown in Figure 3. There was a striking similarity in the epidemics in each battalion of new recruits which arrived between the middle of December and the middle of April. During the spring months the epidemics declined in severity, and during the summer they were absent or barely discernible.

Battalions which begin training during the late summer and fall do not experience such epidemics until December or January, after they have completed from 1 to 3 months of training. The epidemics which occur at this time are more irregular and less sharply defined, but the total admission rates are comparable with those of battalions which arrive during the winter. This phenomenon is shown in two of the battalions in Figure 3. It is brought out more clearly in the experience of subsequent years.

During the fall and winter of 1943–1944 two waves of respiratory diseases occurred among new recruits. These two waves are most clearly indicated in the battalions which were under continuous observation from October to February (Figure 4). During this period serological studies were performed on approximately 800 respiratory admissions. The first wave began on November 28 and extended through

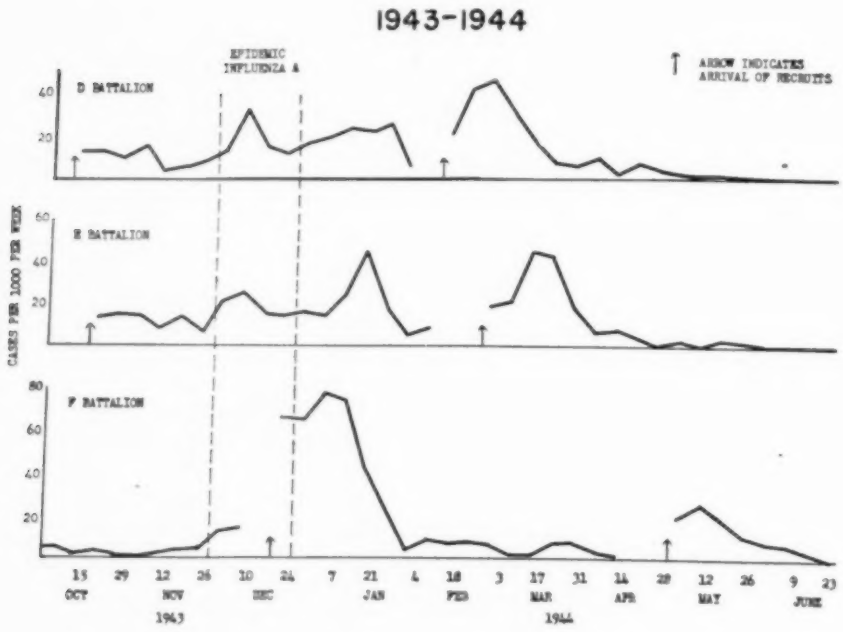

FIGURE 4—Respiratory Admission Rates per 1,000 per Week, Three Representative Battalions, FA-RTC, October 9, 1943, to June 23, 1944

December 24. From 80 to 90 per cent of all respiratory admissions during this wave showed significant increases in antibody titer to influenza A.

The second wave began late in December and extended through January. Less than 5 per cent of the respiratory admissions during the second wave showed evidence of influenza A by serological tests. The first epidemic, therefore, was due almost solely to influenza A and the second was an epidemic of ARD. Of special interest was "F" battalion (Figure 4), which was filled with new recruits during the middle of December as the influenza epidemic was subsiding. A severe epidemic occurred in this group immediately following its arrival. Serological studies of the respiratory admissions revealed that less than 10 per cent of the cases were influenza A. These few cases were concentrated in the first and second week of training. Thus the epidemic was not influenza A, but rather 90 per cent of the cases were ARD. Presumably these new recruits had already had their experience with influenza virus A prior to their arrival.

The battalions which were formed from new recruits arriving in February and March experienced moderate epidemics of ARD similar to, though somewhat less severe, than those observed in late winter and spring of the previous year. The incidence pattern of ARD during the winter season of 1943–1944 was essentially similar to that observed in the previous year, when the superimposed epidemic of influenza A is taken into account. The longer period of training which the recruits were undergoing during this period revealed more clearly than was possible in the previous year that epidemics of ARD among men who arrived in October may not occur until January, after they have completed 3 months of basic training.

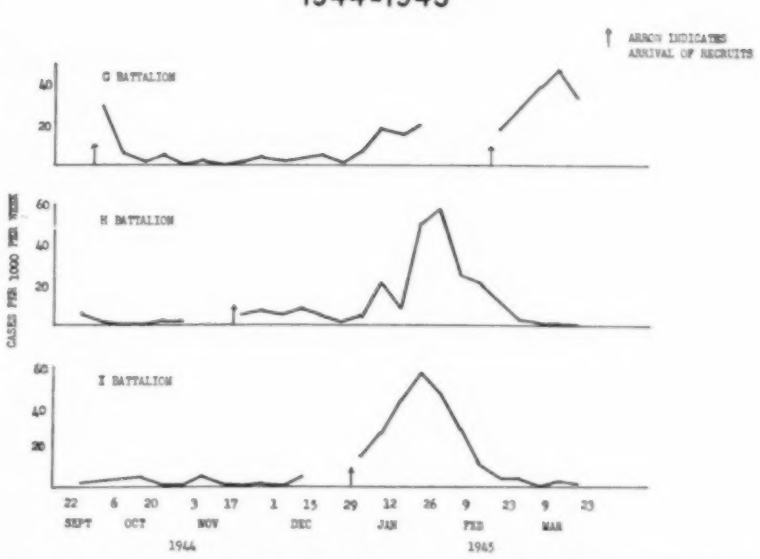
1944-1945
ARROW INDICATES ARRIVAL OF RECRUITS
G BATTALION
H BATTALION
I BATTALION
CASES PER 1000 PER WEEK
22 6 20 3 17 1 15 29 12 26 9 23 9 23
SEPT OCT NOV DEC JAN FEB MAR
1944 1945

FIGURE 5—Respiratory Admission Rates per 1,000 per Week, Three Representative Battalions, FA-RTC, September 23, 1944, to March 23, 1945

In 1944–1945 the respiratory season began during the first week of January (Figure 5). Definite epidemics appeared in each battalion, approximately simultaneously, although there were marked differences in the period during which the battalions had been training. Throughout this respiratory season an extensive search was conducted for cases of influenza A and B, hemolytic streptococcal infection, and other specific diseases. Only sporadic cases were found. Over 90 per cent of the respiratory admissions were classified as respiratory diseases of unknown etiology.[5] Again the incidence pattern of ARD was similar to that observed in two previous years.

COMPARISON OF ARD WITH OTHER RESPIRATORY DISEASES

The characteristic differences in the epidemiology of ARD from other respiratory diseases may be emphasized by a comparison with three specific diseases which have been observed in epidemic form at Fort Bragg. These three diseases are influenza A, localized acute streptococcal pharyngitis, and German measles. During the fall and winter of 1943–1944 the respiratory admissions from "E" battalion were studied in detail[6] (see Figure 4). By means of serological and bacteriological tests it was possible to separate more than 90 per cent of the cases into three diagnostic groups, influenza A, streptococcus pharyngitis, and ARD. The weekly incidence of these diseases is presented in Figure 6.

The wave of influenza swept through this battalion in early December and rapidly subsided. The wave of ARD in January was equally distinct and almost twice as severe as the epidemic of influenza. In November and early December two sporadic cases of beta-hemolytic streptococcal pharyngitis occurred and in the last weeks of December a small outbreak of 10 cases developed. All of these 12 cases were caused by a specific strain of group A

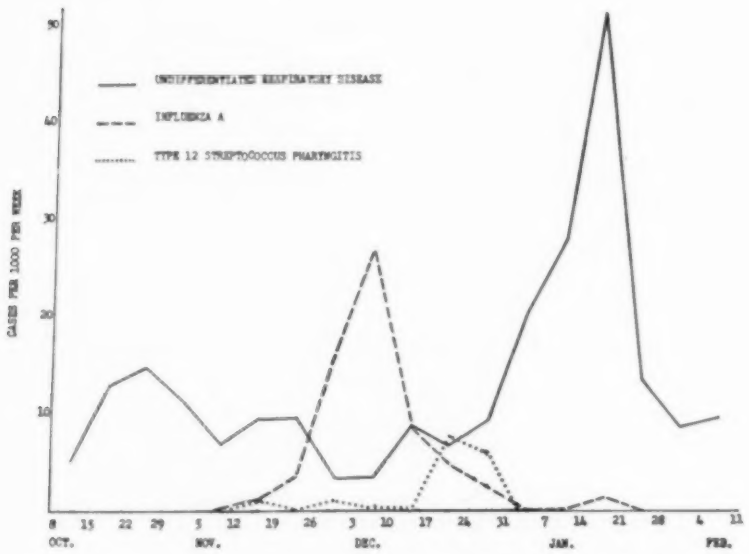

FIGURE 6—Weekly Incidence Rates of ARD, Influenza A, and Type 12 Streptococcus Pharyngitis in "E" Battalion, October 9, 1943, to February 11, 1944

hemolytic streptococcus, type 12. They were confined to four adjoining barracks. No other cases of streptococcal infection of any type were discovered in the remaining 12 barracks of the battalion during the 4 months of this study.

An epidemic of German measles occurred during the late winter and early spring of 1943.[2] Large numbers of cases appeared, not only in the FA-RTC but also among many organizations of seasoned men. During this period 9 separate groups of new recruits were under observation. In 7 of these 9 groups, the peak incidence of German measles occurred during the week ending March 26. In one group, an equal number of cases occurred during the weeks ending March 19 and March 26 and in only 1 group did the highest incidence of this disease occur earlier.

In Figure 7, the time of occurrence of German measles is contrasted to that of epidemic ARD in 5 representative battalions. The cases were clearly concentrated during the month of March. This concentration appeared to be unrelated to the time of arrival of the recruits.

These 3 specific diseases, influenza A, German measles, and type 12 streptococcus pharyngitis all showed epidemiological features which were distinct and characteristic. The first 2 infections occurred in both seasoned men and new recruits. The third was sharply localized to a few barracks. During a 3 year period epidemics of influenza A and German measles have been observed only once, although scattered cases of these two infections were seen, both before and subsequent to these epidemics. No widespread epidemics of streptococcal infection have been observed in the FA-RTC and only a few localized epidemics, such as the one described, have been detected, although sporadic cases have been present in small numbers.

The epidemic waves of ARD in December and January bear some resemblance to the waves of influenza A and

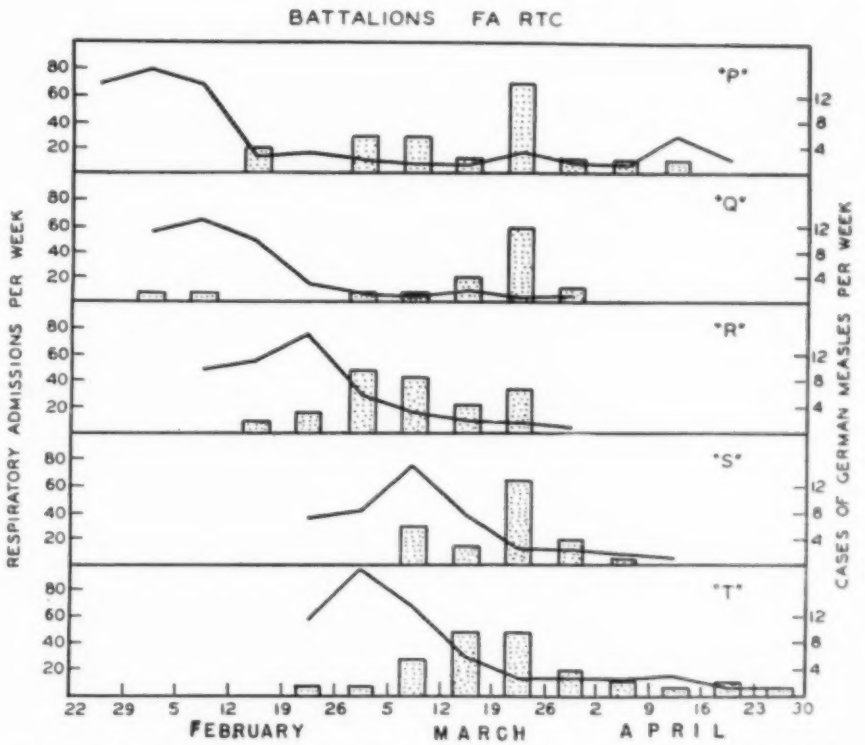

FIGURE 7—Incidence of Admissions for Respiratory Disease and German Measles in 5 Representative Battalions, FA-RTC, January 23 to April 30, 1943

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German measles in that they affect all organizations of new recruits in various stages of training. They are different, however, in that they do not affect seasoned men. Furthermore, they recur each year. Each group of new recruits which arrives, subsequent to the first wave, also is affected.

DISCUSSION

Acute undifferentiated respiratory disease (ARD) at Fort Bragg has shown characteristic epidemiological features over a period of three consecutive respiratory seasons. The pattern has recurred in a consistent manner each year and it has been distinct from that of certain diseases of known cause. These findings suggest that ARD is a specific disease process due to a single or to a group of closely related agents.[7]

The sharply defined epidemics which occur during winter months among new recruits indicate that these men are highly susceptible to the disease. The rapid subsidence of the epidemics implies some form of an immunity mechanism. From the consistently low incidence following the epidemics it may be inferred that this immunity is maintained for several months. Absence of epidemics of ARD in seasoned troops at Fort Bragg suggests that the immunity lasts for a considerable period, possibly 1 to 2 years or longer.

Certain factors have been considered to be important in causing respiratory disease among soldiers. Among these are: (1) the exchange of nasopharyngeal flora among men who are brought to-

gether from different geographic regions; (2) exhaustion from the arduous physical training program; (3) reactions to the immunization procedures; and, (4) difficulties in psychological adjustment to military life.

The findings at Fort Bragg do not support any of these factors as having primary importance. The epidemics which occur at the beginning of the respiratory season among recruits who have been in training for several months cannot be explained by these factors. By this time the men are well adjusted to army life, the immunization program is completed, they are hardened physically, and the opportunity to exchange flora has been present for several months.

Another factor which is commonly thought to be important in the causation of respiratory disease is exposure to inclement weather. During the training period each battalion undergoes field exercises during which the men sleep in the field in all types of weather. Epidemics of ARD have accurred prior to, during, and subsequent to these field bivouacs in approximately equal severity. Since the rigors of life in the field may be excessive in contrast to life in garrison it would appear that exposure to the elements is not of primary importance in causing epidemics of ARD.

Unsanitary mess halls and inadequately washed dishes also have been much discussed as potential sources of spread of respiratory diseases. It is difficult to explain the epidemics of ARD at Fort Bragg on this basis. The mess halls of the FA-RTC have been notable for their consistently excellent sanitary condition. It is doubtful that the sanitary standards in more than 60 mess halls break down simultaneously each winter, or that in the late winter and spring only those mess halls serving newly arrived recruits are in an unsanitary state.

Although these commonly held beliefs do not appear to have been primary factors in causing epidemics of ARD at Fort Bragg, it is entirely possible that some of them may have been secondary or contributing factors that influence the severity and extent of the disease.

One factor of unquestioned importance in the occurrence of ARD is the season of the year. Epidemics have occurred at Fort Bragg regularly during the winter and early spring but none have been observed during the summer and early fall. Similar seasonal variations are well recognized for most acute respiratory and contagious diseases in temperate climates. The mechanism of this seasonal effect is an obscure and probably complex problem.

A limited amount of evidence suggests that these epidemiological findings may be applicable to other Army posts and possibly to civilian life. An almost identical pattern has been observed in one large Naval Training Station in New England.[8, 9] In many military installations which receive a constant flow of recruits rather than a staggered flow, such as that at Fort Bragg, the pattern is less apparent, but it has been shown that, during the winter months, new recruits are most susceptible to common respiratory diseases during the first 4 to 6 weeks of military life.[10-13] In many of these studies the epidemiological pattern has been complex, due to the epidemic occurrence of influenza A or B, acute streptococcal infections, and pneumococcal pneumonia.[11, 14-20]

Evidence that a similar pattern operates in civilian life is difficult to ascertain because of the great difference in the environment and living conditions. The waves of respiratory disease that are observed in schools [21] and colleges [22] may represent a modified form of the same phenomenon. It should be pointed out that these semi-isolated and semi-regimented civilian populations have some characteristics which are similar

to military organizations. It is questionable that the distinction between new recruits and seasoned men is generally applicable to civilian life. Much further study, under varying conditions, in different geographic regions, and over a period of years, will be necessary before the significance of the epidemiological pattern observed at Fort Bragg can be fully interpreted.

It should be reëmphasized that the present obsrevations are derived solely from a study of hospitalized cases of respiratory disease. Such cases represent only the severe form of illnesses which may be widespread among men who remain in the field. Furthermore, in addition to mild illnesses of the same specific nature as ARD, other types of respiratory illnesses which only rarely result in hospitalization may also be prevalent. Studies of dispensary cases, 1943–1944 [6] and 1944–1945 [5] showed that during the late summer and fall months the incidence of non-hospitalized cases of respiratory disease increased considerably without a corresponding rise in hospital admissions. Thus the incidence pattern of minor respiratory illnesses differs from that of hospitalized cases of ARD. This finding suggests that at least some of the minor illnesses may have resulted from a different specific cause.

It is impossible to determine whether the diseases which have been observed among new recruits at Fort Bragg correspond with the common forms of respiratory disease, such as the common cold, which are seen generally in civilian life. It is reasonable to suppose that they do, but the total lack of adequate means of differential diagnosis prevents the elucidation of this point.

These observations have been presented as deductions based primarily on epidemiological evidence. They are not considered as final conclusions but rather are presented in the hope that they may help to define some of the problems in the study of acute respiratory disease of unknown etiology, and that they may aid in the interpretation of epidemiological and clinical investigations of specific respiratory diseases.

ACKNOWLEDGMENTS—The Commission on Acute Respiratory Diseases wishes to thank the following officers for their active support which made these studies possible:

Major General D. C. Cubbison
Brigadier General J. T. Kennedy
Brigadier General H. C. Coburn, Jr.
Colonel G. D. Chunn
Colonel J. N. Williams
Colonel R. J. Horr
Colonel W. B. Daniels
Lieutenant Colonel F. W. Bryant
Lieutenant Colonel J. M. Kinsman

and the commanding officers and their staffs of the regiments, battalions, and batteries of the FA-RTC.

The following men have rendered valuable assistance during the course of the studies:

Major G. R. Newton, Personnel Adjutant, FA-RTC
Major R. L. Siegel, Surgeon, FA-RTC
Major B. E. Moore, Surgeon, FA-RTC
Major W. J. McVey, Classification Officer, FA-RTC
Major A. M. Sands, Chief Sanitation Branch, FA-RTC
Captain D. Butterfield, Personnel Adjutant, FA-RTC
Captain L. M. Bowen, Registrar, Regional Hospital
Captain D. L. Martin, Registrar, Regional Hospital

and their staff officers and enlisted men. The medical officers on the wards, in the X-ray Service and in the Receiving Office have coöperated fully in this study.

REFERENCES

1. Dunham, G. C. *Military Preventive Medicine.* Medical Field Service School, Carlisle Barracks, Pa., 3rd Ed., Chap. III, 1938.

2. Commission on Acute Respiratory Diseases. Epidemiology of Atypical Pneumonia and Acute Respiratory Disease at Fort Bragg, N. C. *A.J.P.H.*, 34: 335–346, 1944.

3. Commission on Acute Respiratory Diseases. Endemic Exudative Pharyngitis and Tonsillitis. *J.A.M.A.*, 125:1163–1169, 1944.

4. Commission on Acute Respiratory Diseases. Role of Beta-Hemolytic Streptococci in Common Respiratory Disease. *A.J.P.H.*, 35:675–682, 1945.

5. Commission on Acute Respiratory Diseases and Commission on Air-Borne Infections. A Study of the Effect of Oiled Floors and Bedding on the Incidence of Respiratory Disease in New Recruits. *Am. J. Hyg.*, 43:120–144, 1946.

6. Commission on Acute Respiratory Diseases. The Effect of Double-Bunking in Barracks on the Inci-

dence of Respiratory Disease. *Am. J. Hyg.*, 43:65-81, 1946.

7. Frost, W. H. Epidemiology. Nelson Loose-Leaf System of Medicine. 2, Chap. 7:163-190, 1927. Reprinted in *Papers of Wade H. Frost*, New York, 1941. The Commonwealth Fund, see p. 495.

8. Breese, B. B., Stanbury, J., Upham, H., Calhoun, A. J., Van Buren, R. L., and Kennedy, A. S. Influence of Crowding on Respiratory Illness in Large Naval Training Station. *War Med.*, 7:143-146, 1945.

9. Jones, T. D. Personal Communication.

10. Wheeler, S. M., Ingraham, H. S., Hollaender, A., Lill, N. D., Gershon-Cohen, J., and Brown E. W. Ultra-Violet Light Control of Air-Borne Infections in a Naval Training Center. *A.J.P.H.*, 35:457-468, 1945.

11. Hodges, R. G. The Use of Sulfadiazine as a Prophylactic against Respiratory Disease. *New England J. Med.*, 231:817-820, 1944.

12. Bigg, E., Jennings, B. H., and Olson, F. C. W. Epidemiologic Observations on the Use of Glycol Vapors for Air Sterilization. *A.J.P.H.*, 35:788-798, 1945.

13. Anderson, P. H. R., Buchanan, J. A., and MacPartland, J. J. Oiled Floors to Control Respiratory Infection. An Army Experiment. *Brit. M. J.*, 1:616 (May 6), 1944.

14. Coburn, A. F. The Prevention of Respiratory Tract Bacterial Infections. *J.A.M.A.*, 126:88-92, 1944.

15. Bureau of Medicine and Surgery, Navy Department, Washington, D. C. The Prevention of Respiratory Tract Bacterial Infections by Sulfadiazine Prophylaxis in the U. S. Navy. *Navmed* 284, 1943-44.

16. Holbrook, W. P. The Army Air Force Rheumatic Fever Control Program. *J.A.M.A.*, 126:84-87, 1944.

17. Feasby, W. R., and Bynoe, E. T. Survey of Hemolytic Streptococcus Infections at Camp Borden, Ontario, 1943. I. Epidemiology. *War Med.*, 5:207-215, 1944.

18. Hare, R., Hamilton, J., and Feasby, W. R. Influenza and Similar Respiratory Infections in a Military Camp over a Period of Three Years. *Canad. Pub. Health J.*, 34:453-464, 1943.

19. Stuart-Harris, C. H., Andrewes, C. H., Smith, W., Chalmers, D. K. M., Cowen, E. G. H., and Hughes, D. L. A Study of Epidemic Influenza: With Special Reference to the 1936-37 Epidemic. Med. Res. Council, *Spec. Rep. Series*, No. 228, London, 1938.

20. Thompson, S., and Glazebrook, A. J. Infectious Disease in a Semi-Closed Community. *J. Hyg.*, 41:570-615, 1941.

21. The School Epidemics Committee. Epidemics in Schools. An Analysis of the Data Collected During the First Five Years of a Statistical Inquiry. Med. Res. Council, *Spec. Rep. Series*, No. 227, 1938.

22. Bock, A. V. Clinical Observations, Complications, and Treatment of Acute Upper Respiratory Tract Infections. *Ann. Int. Med.*, 12:317-322, 1938.

Pasteurization of Liquid Egg Products III. Destruction of Salmonella in Liquid Whole Egg*

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THE presence of Salmonella organisms has been reported in hen, turkey, duck, goose, and pigeon eggs.[1-6] Less information is available in the literature concerning the occurrence of Salmonella in hens' egg products. Bornstein, *et al.*[7] reported the isolation of *S. senftenberg* from a sample of Chinese egg powder. Gibbons and Moore [8] isolated *S. bareilly, S. oranienburg, S. typhimurium, S. thompson, S. minnesota, S. pullorum, S. newport, S. manhattan,* and *S. potsdam* from samples of Canadian whole egg powder. Other isolations from egg powder have been reported.[9, 10]

Pasteurization affords an effective means of destroying microörganisms in liquid egg.[11-14] It would seem to be the most logical method of destroying Salmonella in liquid egg, i.e., if possible to do so without affecting the desirable properties of the treated product. In December, 1944, the U. S. Army Quartermaster Corps wrote into their tentative specifications for powdered whole egg the requirement that "The liquid egg just prior to drying shall be preheated by the flash method to not less than 140° F."

Neither pasteurization nor thermal death rate temperature and time relationships necessary to destroy Salmonella in liquid whole egg has been previously reported in the literature to the authors' knowledge. Some data are available, however, regarding the destruction of Salmonella in eggs, liquid egg, and egg mixes during cooking. It has been found [1] that soft boiling, coddling, or frying on one side did not always render an egg free from Salmonella organisms. Eggs artificially infected with *S. pullorum* [2] required a 5 minute boiling period to kill all of the organisms. Van Oijen [5] and Wedeman [15] recommended that duck eggs be boiled 10 minutes before use or the broken out liquid be heated at 149° F. for 20 minutes to destroy *S. enteritidis* and *S. paratyphi*, which are sometimes

A report on a joint research project of the Quartermaster Corps (U. S. Army) Committee on Food Research, the Iowa Agricultural Experiment Station and the United States Department of Agriculture, Bureau of Agricultural and Industrial Chemistry.

* *Journal Paper No. J-1339* of the Iowa Agricultural Experiment Station, Ames, Iowa, Project No. *755*.

present. Merely bringing custard to a second boil, after the addition of a little thickening, was found to render it free from added *S. enteritidis*.[16] Custard pies to which the organism had been added before baking were free from the organism when they left the oven. Gibbons and Moore[17] used reconstituted egg powders, heavily contaminated with *S. barcilly*, *S. oranienburg*, and *S. typhimurium* in the preparation of scrambled eggs, omelets, sponge cakes, custards, and muffins. No Salmonella could be detected in the cooked foods. The scrambled eggs were prepared in 3 minutes and reached 179.6° F. The omelets were prepared in 4 to 5 minutes, and reached 201 to 208° F. A large custard was baked at 284° F. for 45 minutes. The muffins were baked 20 minutes at 410° F. The large sponge cakes were baked at 374° F. for 45 minutes.

The objective of the experiments described in this paper has been to determine pasteurization temperatures and times necessary to destroy different Salmonella types in liquid whole egg.

PROCEDURES

In the experiments which follow, batches of sterile or very low count Salmonella-free liquid whole egg were artificially inoculated with 40,000 to 1,000,000 Salmonella organisms per ml. Portions of each inoculated batch were then subjected to different pasteurization temperatures and times in an experimental pasteurizer, laboratory model.[12]

Twelve to 54 clean eggs with sound shells were used in the preparation of each batch of liquid. They were obtained from the Iowa State College *S. pullorum*-free flocks. The shell eggs were held a week at room temperature to make their age more comparable to eggs used in breaking plants. Preparatory to breaking, bacteria were removed from the shell surface by soaking each egg in 1 per cent sodium hydroxide for 2 to 5 minutes, draining, dipping in 95 per cent alcohol and by flaming the adhering alcohol. Each egg was then broken separately into a sterile pint jar by cracking the shell on the edge and draining the contents into the jar. It was observed for appearance and odor. If normal, it was transferred to a sterile 2 quart jar. Any abnormal egg was discarded and the container replaced by a clean sterile one. The accumulated eggs in the larger jar were shaken to break the yolk membranes. The liquid egg was then passed through a hand homogenizer, strained through a double layer of cheesecloth, and poured into a sterile jar containing glass beads. After shaking the jar 100 times through a wide arc, a sample was removed for a plate count. The remaining liquid egg was then inoculated with a broth suspension of Salmonella. Melange and inoculum were quickly and violently shaken by hand 200 times. A sample was again removed for plating and then pasteurization operations were started immediately.

The inoculum for each of the Salmonella types was always prepared in the same manner. Different strains, 6 to 13, were grown in dextrose broth (Difco) at 37° C. One, 2, 3, and 4 day old cultures were made of each strain. Measured quantities of the broth cultures were combined to give a mixture of cells of different ages. Usually about 5 ml. of the well mixed composited broth suspension were used per 250 ml. of egg.

Uninoculated, inoculated (raw), and pasteurized samples were plated on tryptose glucose extract agar after the procedure outlined in the A.P.H.A. tentative methods for the microbiological examination of eggs and egg products.[18] Plates were incubated at 37° C. (98.6° F.) for 72 hours. In event only one or two colonies of doubtful nature appeared on a plate, they were fished and transferred to Kligler's

TABLE 1

Influence of Pasteurization Temperatures and Times on the Destruction of Some Group B and D Types of Salmonella in Liquid Whole Egg

	Group B						Group D		
	S. derby			S. typhimurium			S. pullorum		
Temp. ° F.	Time Min.	Number per ml.	Destruction %	Time Min.	Number per ml.	Destruction %	Time Min.	Number per ml.	Destruction %
150	0.1	170	99.9	0.1	350	99.9	0.1	0	100.0
	0.2	20	99.9	0.1	5,350	99.7	0.1	0	100.0
	0.2	405	99.9	0.2	0	100.0	0.2	0	100.0
	0.3	0	100.0	0.3	0	100.0			
148	0.2	250	99.9	0.1	186,800	90.9	0.1	0	100.0
	0.2	5	99.9	0.2	0	100.0	0.1	0	100.0
	0.3	0	100.0	0.2	0	100.0	0.2	0	100.0
	0.3	0	100.0	0.7	0	100.0	0.3	0	100.0
146	0.2	4,300	98.3	0.3	4,450	99.8	0.1	45	99.9
	0.2	0	100.0	0.3	5	99.9	0.1	815	99.9
	0.3	0	100.0	0.8	0	100.0	0.3	0	100.0
	1.0	0	100.0	1.0	0	100.0	0.6	0	100.0
144	0.2	67,950	73.9	0.3	675	99.9	0.1	155	99.9
	0.3	0	100.0	1.0	0	100.0	0.1	970	99.5
	0.9	0	100.0	1.1	0	100.0	0.9	0	100.0
	1.1	0	100.0	1.2	0	100.0	1.1	0	100.0
142	0.8	50	99.9	0.7	245	99.9	0.1	18,100	92.6
	0.9	10,800	99.4	1.2	15	99.9	0.2	350	99.8
	1.2	0	100.0	1.5	0	100.0	0.9	0	100.0
	1.3	0	100.0	2.0	0	100.0	1.5	0	100.0
140	1.4	30	99.9	1.2	1,060	99.9	1.3	0	100.0
	2.1	3,900	99.8	2.2	10	99.9	1.5	0	100.0
	2.6	0	100.0	2.2	0	100.0	1.6	0	100.0
	3.0	0	100.0	2.4	0	100.0			
138	1.4	115	99.9	2.2	230	99.9	1.7	0	100.0
	2.0	33,450	98.3	2.5	215	99.9	1.8	0	100.0
	2.7	0	100.0	3.1	0	100.0			
	3.0	0	100.0	3.5	0	100.0			

iron agar (Difco) to which had been added 0.5 per cent sucrose, for determination of typical Salmonella reactions.

One hundred and sixty-four strains representing 16 Salmonella types isolated from egg powder were used in the pasteurization trials. Of these, 150 strains were isolated by the Microbiology Research Division (1943–1944) and were identified serologically by Dr. E. H. Spaulding, Temple University School of Medicine, Philadelphia, Pa. Fourteen strains consisting of one *S. montevideo*, four *S. oranienburg*, one *S. oregon*, three *S. tennessee*, and five *S. pullorum* were obtained from the Army Service Forces Seventh Service Command Medical Laboratory, Fort Omaha, Nebr.

RESULTS

Typical findings obtained during representative pasteurization runs for the different Salmonella types are shown in Tables 1–5 and Chart 1. It was not difficult to destroy Salmonella by heat. Practical pasteurization temperature and time relationships resulted in total destruction.

Of the sixteen types studied (Table 5), *S. senftenberg* was most resistant to heat and *S. pullorum* least resistant (Chart 1). Four of the eleven strains of *S. senftenberg* did not produce a darkening of Kligler's iron agar. A mixture of these strains was more resistant to heat than a mixture of the other seven strains, which darkened the medium.

TABLE 2

Influence of Pasteurization Temperatures and Times on the Destruction of Some Group C Types Salmonella in Liquid Whole Egg

	S bareilly			*S. montevideo*			*S. oranienburg*			*S. oregon*			*S. tennessee*		
Temp. ° F	*Time Min.*	*Number per ml.*	*Destr. %*	*Time Min.*	*Number per ml.*	*Destr. %*	*Time Min.*	*Number per ml.*	*Destr. %*	*Time Min*	*Number per ml.*	*Destr. %*	*Time Min.*	*Number per ml.*	*Destr. %*
150	0.1	many		0.1	3,400	99.5	0.1	375	99.8	0.2	9,150	99.5	0.1	450	99.9
	0.2	3,020	99.1	0.2	615	99.6	0.2	110	99.9	0.2	10	99.9	0.2	0	100.0
	0.2	0	100.0	0.2	30	99.9	0.4	0	100.0	0.2	0	100.0	0.2	0	100.0
	0.3	0	100.0	0.3	0	100.0				0.3	0	100.0	0.3	0	100.0
148	0.2	many		0.2	8,500	94.4	0.3	0	100.0	0.2	2,350	97.5	0.2	460	99.9
	0.2	490	99.9	0.2	505	99.9	0.5	0	100.0	0.2	35	99.7	0.3	995	99.9
	0.3	0	100.0	0.2	0	100.0				0.4	0	100.0	0.3	0	100.0
	1.5	0	100.0	0.3	0	100.0				0.5	0	100.0	0.7	0	100.0
146	0.2	many		0.1	725	99.9	0.1	30	99.9	0.2	many		0.2	many	
	0.2	29,050	96.3	0.2	0	100.0	0.9	0	100.0	0.8	0	100.0	0.2	23,250	98.7
	0.6	0	100.0	0.7	0	100.0	1.3	0	100.0	1.1	0	100.0	0.7	0	100.0
	1.5	0	100.0										1.3	0	100.0
144	0.9	0	100.0	0.2	0	100.0	0.1	58,850	82.8	0.2	many		0.2	17,850	99.0
	1.4	0	100.0	0.7	0	100.0	0.9	0	100.0	0.9	0	100.0	0.7	0	100.0
	1.6	0	100.0				1.2	0	100.0	1.2	0	100.0	1.4	0	100.0
										1.3	0	100.0	1.5	0	100.0
142	0.9	55	99.9	0.2	340	98.7	1.0	17,300	87.8	1.2	70	99.9	0.2	many	
	1.6	160	98.9	0.8	15	99.9	1.1	20	99.9	1.3	15	99.9	1.0	45	99.9
	1.7	0	100.0	1.2	0	100.0	1.6	0	100.0	1.6	0	100.0	1.3	0	100.0
	1.8	0	100.0	1.4	0	100.0	1.6	0	100.0	2.6	0	100.0	1.5	0	100.0
140	1.9	0	100.0	0.2	5,345	79.0	1.2	175	99.9	1.1	200	99.9	1.0	60	99.9
	3.0	0	100.0	1.7	0	100.0	1.3	100	99.9	1.7	760	99.7	1.4	3,000	99.8
	3.1	0	100.0	1.9	0	100.0	1.5	0	100.0	2.1	0	100.0	1.7	0	100.0
							1.8	0	100.0	2.8	0	100.0	1.8	0	100.0
138	1.6	210	99.9	1.9	130	99.9	1.5	0	100.0	2.4	990	99.6	1.9	5,200	99.7
	2.5	0	100.0	1.9	0	100.0	2.5	0	100.0	3.0	0	100.0	2.6	2,000	99.9
	5.8	0	100.0	2.6	0	100.0				3.4	25	99.9	3.0	0	100.0
										3.8	0	100.0	3.3	0	100.0

TABLE 3

Influence of Pasteurization Temperatures and Times on the Destruction of Some Group E Types Salmonella in Liquid Whole Egg

	S. anatum			*S. london*			*S. meleagridis*			*S. Newington*			*S. senftenberg*		
Temp. ° F	*Time Min.*	*Number per ml.*	*Destr. %*	*Time Min.*	*Number per ml.*	*Destr. %*	*Time Min.*	*Number per ml.*	*Destr. %*	*Time Min.*	*Number per ml.*	*Destr. %*	*Time Min.*	*Number per ml.*	*Destr. %*
150	0.1	275	95.1	0.2	19,950	85.4	0.1	2,050	95.3	0.1	many		0.1	49,100	91.2
	0.1	2,810	99.9	0.2	15	99.9	0.2	0	100.0	0.2	500	99.9	0.3	640	99.9
	0.2	0	100.0	0.2	0	100.0				0.2	0	100.0	0.5	0	100.0
	0.2	0	100.0	0.3	0	100.0				0.3	0	100.0	0.6	0	100.0
148	0.2	120	99.9	0.3	20,600	84.9	0.1	545	98.7	0.2	295	99.9	0.4	2,240	99.8
	0.3	140	97.5	0.4	495	89.9	0.2	0	100.0	0.2	5	99.9	0.9	60	99.9
	0.8	0	100.0	0.9	0	100.0	0.4	0	100.0	0.4	0	100.0	1.6	0	100.0
	1.0	0	100.0	0.9	0	100.0	0.5	0	100.0	0.9	0	100.0	1.7	0	100.0
146	0.2	7,200	99.4	0.2	65	99.9	0.1	9,200	79.1	0.2	260	99.9	1.1	250	99.9
	0.9	0	100.0	0.7	0	100.0	0.2	0	100.0	0.3	240	99.9	1.9	30	99.9
	1.4	0	100.0	1.1	0	100.0	0.7	0	100.0	0.7	0	100.0	1.9	0	100.0
	1.8	0	100.0	1.2	0	100.0	1.9	0	100.0	1.1	0	100.0	2.7	0	100.0
144	0.2	10,150	99.2	0.2	14,550	99.1	0.1	8,650	80.3	0.2	1,405	99.7	2.0	250	99.9
	1.0	0	100.0	1.1	0	100.0	0.2	295	99.7	0.3	3,600	99.8	2.7	58	99.9
	1.4	0	100.0	1.3	0	100.0	0.7	0	100.0	0.7	0	100.0	3.6	0	100.0
	1.8	0	100.0	2.1	0	100.0	1.5	0	100.0	1.2	0	100.0	3.9	0	100.0
142	0.2	442,100	63.6	0.2	174,800	88.7	1.5	70	99.9	0.6	605	79.5	2.9	300	99.9
	1.0	0	100.0	0.9	1,810	98.7	1.9	10	99.9	1.1	5	99.9	3.1	205	99.9
	1.4	0	100.0	1.1	0	100.0	2.3	0	100.0	1.1	0	100.0	3.8	0	100.0
	1.9	0	100.0	1.3	0	100.0	3.0	0	100.0	1.4	0	100.0	5.0	0	100.0
140	1.0	645	99.9	1.3	4,885	99.5	0.9	2,450	99.9	1.3	20	99.9	2.4	2,000	99.8
	1.2	50	99.1	1.3	0	100.0	1.5	45	99.9	1.4	0	100.0	4.4	535	99.8
	1.7	0	100.0	1.4	0	100.0	2.5	0	100.0	1.5	0	100.0	6.7	0	100.0
	1.9	0	100.0	2.2	0	100.0	3.0	0	100.0	1.6	0	100.0	8.8	0	100.0
138	1.8	905	99.9	1.3	40	99.9	2.6	415	99.9	1.3	7,050	98.9	3.2	1,290	99.8
	2.2	55	99.9	1.5	15	99.9	3.3	940	99.9	2.3	150	94.9	4.8	675	99.9
	3.1	0	100.0	2.3	0	100.0	3.7	0	100.0	2.5	0	100.0	8.5	50	100.0
	3.2	0	100.0	2.6	0	100.0	3.7	0	100.0	2.8	0	100.0	10.1	0	100.0

TABLE 4

Influence of Pasteurization Temperatures and Times on the Destruction of Some Types of Salmonella in Liquid Whole Egg

Temp. ° F.	*S. cerro*			*S. kentucky*			*S. rubislaw*		
	Time Min.	Number per ml.	Destruction %	Time Min.	Number per ml.	Destruction %	Time Min.	Number per ml.	Destruction %
150	0.2	10,450	99.5	0.1	235	99.9	0.1	805	99.9
	0.2	360	99.9	0.2	700	99.9	0.2	1,240	99.9
	0.3	1,215	99.9	0.3	0	100.0	0.3	0	100.0
	0.4	0	100.0	0.4	0	100.0	0.3	0	100.0
148	0.2	23,400	99.8	0.1	12,150	99.5	0.1	175,050	81.9
	0.4	5,320	99.8	0.3	140	99.9	0.3	10,610	98.8
	0.9	10	99.9	0.7	0	100.0	0.8	0	100.0
	1.3	0	100.0	0.7	0	100.0	1.0	0	100.0
146	0.9	70	99.9	0.1	342,900	86.9	0.1	72,900	92.5
	1.2	5	98.9	0.5	0	100.0	0.8	0	100.0
	2.0	0	100.0	0.5	0	100.0	0.9	0	100.0
	2.1	0	100.0				1.5	0	100.0
144	1.0	150	99.9	0.6	0	100.0	0.2	81,800	91.6
	1.2	30	99.9	0.9	15	99.9	0.6	0	100.0
	2.0	0	100.0	1.2	0	100.0	0.9	0	100.0
	2.1	0	100.0	1.7	0	100.0	1.1	0	100.0
142	1.0	1,200	99.9	0.7	0	100.0	0.6	6,370	99.3
	1.3	50	99.9	0.9	735	99.9	0.9	0	100.0
	2.3	0	100.0	1.4	0	100.0	1.7	0	100.0
	2.5	0	100.0	1.7	0	100.0	2.2	0	100.0
140	1.2	1,975	99.9	1.3	325	99.9	1.2	4,170	99.5
	2.4	205	99.9	1.4	0	100.0	1.3	14,250	99.3
	3.3	0	100.0	1.8	0	100.0	2.2	0	100.0
	4.8	0	100.0	2.3	0	100.0	2.6	0	100.0
138	3.1	105	99.9	1.2	15,400	99.4	2.4	8,550	99.6
	4.4	20	99.9	2.7	10	99.9	2.6	0	100.0
	4.5	0	100.0	2.7	0	100.0	3.9	0	100.0
	5.7	0	100.0	2.9	0	100.0			

Salmonella types commonly found in egg, namely, *S. pullorum, S. oranienburg, S. montevideo, S. tennessee, S. anatum, S. barcilly, S. typhimurium, S. meleagridis,* and the others tested (Table 5) with the exceptions of *S. senftenberg* and *S. cerro,* were completely destroyed at the following temperatures and within the following times:

	Minutes
150° F.	0.3
148° F.	0.8
146° F.	0.8
144° F.	1.2
142° F.	2.0
140° F.	2.6
138° F.	3.7

The temperatures and times required to kill *S. senftenberg* are shown in Table 3 and for *S. cerro* in Table 4.

DISCUSSION

Data in Tables 1–5 not only show the comparative efficiencies of different temperature and time combinations in destroying Salmonella organisms in liquid whole egg, but also show that Salmonella types differ in their resistance to the lethal action of heat. Since most of the pasteurization runs were made with cell suspensions composited from several strains of a given type, it is not possible to state definitely that some strains are more heat resistant than others. However, in the case of *S. senftenberg,* a mixture of four strains which did not darken

TABLE 5

A Summary of the Effects of Pasteurization Temperatures and Times on the Destruction of Salmonella in Liquid Whole Egg

		Group →	B		C					D	E					Others		
Temp. °F.	Time Min.	No. Strains →	derby 6	typhimurium 11	Bareilly 10	montevideo 17	oranienburg 22	oregon 7	tennessee 14	pullorum 8	anatum 10	london 10	meleagridis 10	newington 10	senftenberg 11	senftenberg 775W 6	kentucky 6	rubislaw 6
150	0.1		x	x	x	x	x	x	x	o	x	x	x	x	x	x	x	x
	0.2		x	o	x	x	x	x	o	o	o	x	o	x	x	x	x	x
	0.3		o	o	o	o		o	o			o		o	x	x	o	o
	0.4						o								x	o		
	0.5														o			
148	0.1– .2		x	x	x	x		x	x	o	x	x	x	x	x	x	x	x
	0.3– .4		o	o	o	o	o	o	x	o	x	x	o	o	x	x	x	x
	0.5– .9								o		o	o			x	x	o	o
	1.0–1.4															o		
146	0.3– .4		o	x		o				o				x	x	x		
	0.5– .9			o	o		o	o	o		o	o	o	o	x	x	o	o
	1.0–1.4														x	x		
	1.5–1.9														x			
144	0.5– .9		o		o	o	o	o	o	o			o	o	x	x	x	o
	1.0–1.4			o							o	o			x	x	o	
	1.5–1.9														x			
	2.0–2.4														x	o		
142	0.5– .9		x	x	x	x	x	x	x	o		x	x	x	x	x	x	x
	1.0–1.4		o	x	x	o	x	x	x		o	o	x	x	x	x	o	o
	1.5–1.9			o	o		o	o	o				x	o	x			
	2.0–2.4												o		x	o		
140	1.0–1.4		x	x			x	x	x	o	x	x	x	x	x	x	x	x
	1.5–1.9		x	x	o	o	o	x	o		o	o	x	o	x	x	o	
	2.0–2.4		x	x				o							x	x		o
	2.5–2.9		o	o									o		x			
138	1.5–1.9		x	x	x	x	o	x	x	o	x	x	x	x	x	x	x	x
	2.0–2.4		x	x				x	x		x	o	x	x	x	x	x	x
	2.5–2.9		o	x	o	o		x	x				x	o	x	x	x	o
	3.0–3.4			o				x	o		o		x		x	x	o	
	3.5–3.9							o					o		x	x		

x = not all killed
o = all killed

Kligler's iron agar was more resistant than a mixture of seven strains which produced a darkening effect.

The variations in the percentages of organisms killed at the same temperature and approximately the same time in repeated tests with the same Salmonella type may have been influenced by the variations in the cell concentrations of the inocula. Tanner and Dubois [19] and Watkins and Winslow [20] have reported that the greater the concentration of bacteria in an inoculum the more difficult it was to destroy all the cells. The numbers of Salmonella organisms used in these trials were greater than would likely be encountered in properly handled commercial liquid whole egg. Therefore, from the standpoint of numbers of Salmonella, the tests were conducted under more severe conditions than would normally be encountered in the commercial pasteurization of liquid egg.

It was impossible to maintain the exact temperature and time relation-

ships in different trials because of variations encountered in operation of the experimental pasteurizer. This was especially true at the two highest temperatures, 148° F. and 150° F. The higher the temperature and the longer the time of operation, the greater was the formation of film on the inside of the preheater tubes. This made it necessary to vary the temperature of the preheater and rate of flow through it in order to have the egg at a given temperature at the end of the preheater. Because of the difficulty encountered with film formation in the proximity of 150° F., it would be more practical to pasteurize liquid whole egg for the destruction of Salmonella at a temperature of 140° F. to 146° F.

A mixture of different aged cells was used in order to represent more nearly the conditions likely to be found in commercial liquid egg. Robertson [21] reported that, in general, cultures in the rapidly growing state were less resistant to heat, but after 20 hours remained fairly constant. Similar observations regarding effect of age on resistance have been made by others.[22, 23]

The presence of Salmonella types found in hens' eggs and in hens' egg products is of considerable concern to

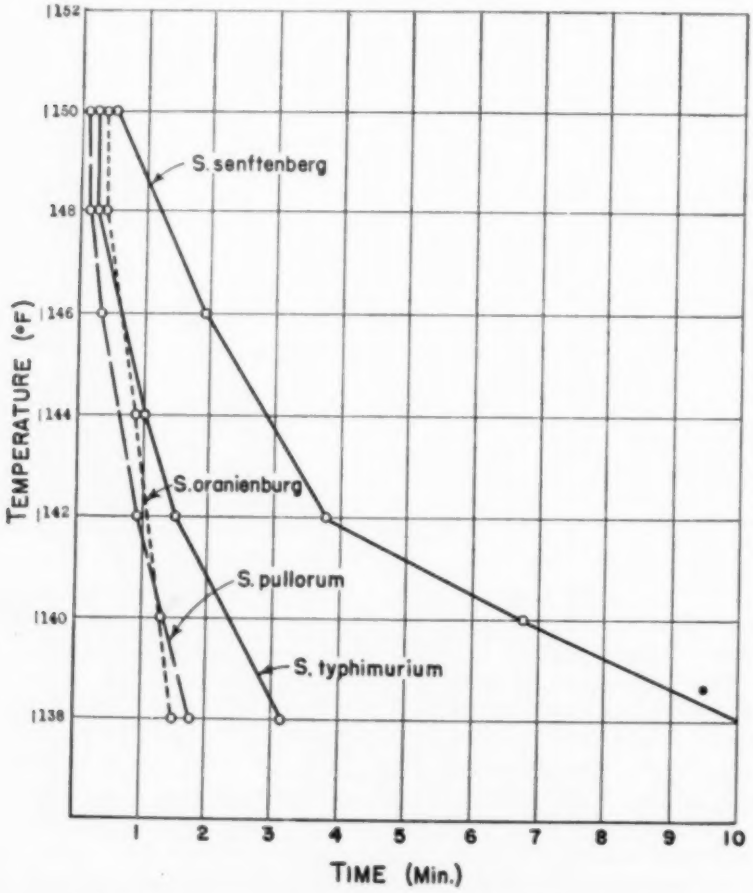

Chart I. Pasteurization Temperatures and Times for Total Destruction of Some Salmonella in Liquid Whole Egg.

producers, to consumers, and to public health officials. A discussion of the significance is beyond the scope of this paper. However, it should be noted that several investigators [6, 9, 24–27] have intimated that the types of Salmonella found in egg products may be responsible for cases of Salmonella food poisoning. Edwards [28] has called attention to the antigenic relationships of the Salmonella types found in fowls, in domestic animals, and in man. Bornstein [29] and others have also pointed out the lack of host specificity of many of the Salmonella types. Findings presented in this paper show that pasteurization is a practical and efficient method for destroying Salmonella organisms in liquid whole egg, thus reducing the potential public health problem.

SUMMARY

Temperatures and times necessary to destroy Salmonella organisms suspended in liquid egg and heat treated in a laboratory model pasteurizer were investigated. Each inoculum was prepared by compositing portions of 1 to 4 day old cultures of six to thirteen strains of a given Salmonella type. One hundred and sixty-four strains representing 16 Salmonella types commonly found in egg powder were used in the pasteurization tests.

Salmonella organisms were not difficult to destroy in the pasteurization unit. *S. senftenberg* and *S. cerro* were the most resistant types, and *S. pullorum* the least resistant. Strains of *S. senftenberg* which did not darken Kligler's iron agar were more resistant than those which produced a darkening of the medium.

With the two exceptions noted, the Salmonella types (*S. pullorum, S. oranienburg, S. montevideo, S. tennessee, S. Anatum, S. bareilly, S. typhimurium, S. meleagridis, S. london, S. newington, S. derby, S. rubislaw, S. oregon* and *S. kentucky*) were destroyed in liquid whole egg at 150° F. within 0.3 minutes, at 148° F. within 0.8 minutes, at 146° F. within 0.8 minutes, at 144° F. within 1.2 minutes, at 142° F. within 2.0 minutes, at 140° F. within 2.6 minutes, and at 138° F. within 3.7 minutes.

REFERENCES

1. Rettger, L. F., Hull, T. G., and Sturges, W. S. Feeding Experiments with *Bacterium pullorum*. The Toxicity of Infected Eggs. *J. Exper. Med.*, 23:475 (Apr.), 1916.

2. Tittsler, R. P. The Sterilization of Eggs Infected with *Salmonella pullorum*. *Poultry Sci*, 9:107 (Dec.–Jan.), 1930.

3. Scott, W. M. Food Poisoning Due to Eggs. *Brit. M. J.*, 2:56 (July), 1930.

4. Lerche, M. Salmonellainfektionen Beim Geflugel und Ihre Bedeutung Fur Die Epidemiologie Den Salmonellabakterien. *Proc. Seventh World's Poultry Congress*, 1939, p. 274.

5. Van Oijen, C. F. Salmonella Infektie in Endeneieren. *Tijdschr. v. Diergeneesk*, 67:280, 1940.

6. Hinshaw, W. R., McNeil, E., and Taylor, T. J. Avian Salmonellosis: Types of Salmonella Isolated and Their Relation to Public Health. *Am. J. Hyg.*, 40:264 (Nov.), 1944.

7. Bornstein, S., Saphra, I., and Strauss, L. Frequency of Occurrence of Salmonella Species. *J. Infec. Dis.*, 69:59 (July–Aug.), 1941.

8. Gibbons, N. E., and Moore, R. L. Dried Egg Powder. XI. Occurrence and Distribution of Salmonella Organisms in Canadian Powder. *Canad. J. Research F.*, 22:48 (May), 1944.

9. Seligmann, E., Saphra, I., and Wassermann, M. Salmonella Infections in Man. An Analysis of 1,000 Cases Bacteriologically Identified by the New York Salmonella Center. *Am. J. Hyg.*, 38:227 (Nov.), 1943.

10. Haines, R. B., and Elliott, E. M. L. Some Bacteriological Aspects of Dehydrated Foods. *J. Hyg.* (Cambridge), 43:370 (Sept.), 1944.

11. Greco, P. A. The Pasteurization of Liquid Whole Egg. Iowa State College. *J. Sci.*, 19:18 (Oct.), 1944.

12. Winter, A. R., Greco, P. A., and Stewart, G. F. Pasteurization of Liquid Egg Products. I. Bacteria Reduction in Liquid Whole Egg and Improvement in Keeping Quality. *Food Research*. (In press.)

13. Payawal, Soledad R., Lowe, Bell, and Stewart, G. F. Pasteurization of Liquid Egg Products. II. Effect of Heat Treatment on Appearance and Viscosity. *Food Research*. (In press.)

14. McFarlane, V. H., Watson, A. J., and Goresline, H. E. Microbiological Control in the Production of Spray-Dried Whole Egg Powder. *U. S. Egg & Poultry Mag.*, 51:250 (June) 51:364 (Aug.), 1945.

15. Wedeman, W. Versuche Zum Nachiveis der Pasteurizierung von Eimasse mit Hilfe der Amylasereaktion nach Van Oijen. *Ztschr. Fleisch-u Milohhyg.*, 50:277, 1940.

16. Cathcart, W. H., Merz, A., and Ryberg, R. E. Staphylococci and Salmonella Control in Foods. IV. Effect of Cooking Bakery Custards. *Food Research*, 7:100 (Mar.-Apr.), 1942.

17. Gibbons, N. E., and Moore, R. L. Dried

Whole Egg Powder. XII. The Effect of Drying, Storage and Cooking on the Salmonella Content. *Canad. J. Research F.*, 22:58 (May), 1944.

18. *Standard Methods for the Examination of Dairy Products.* Eighth Edition. 1941. American Public Health Association.

19. Tanner, F. W., and Dubois, G. E. Some Notes on the Effect of Heat on the Numbers of the Colon-typhoid Groups in Milk. *J. Dairy Sci.*, 8:47 (Jan.), 1925.

20. Watkins, J. H., and Winslow, C.-E. A. Factors Determining the Rate of Mortality of Bacteria Exposed to Alkalinity and Heat. *J. Bact.*, 24:243 (Sept.), 1932.

21. Robertson, A. H. Influence of Age of Cultures on the Heat Resistance of Non-spore-forming Bacteria. *J. Bact.*, 15:27 (Jan.), 1928.

22. Sherman, J. M., and Albus, W. R. Physiological Youth in Bacteria. *J. Bact.*, 8:127 (Mar.), 1923.

23. Stark, C. N., and Stark, Pauline. The Relative Thermal Death Rates of Young and Mature Bacterial Cells. *J. Bact.*, 18:333 (Nov.), 1929.

24. Darby, C. W., and Stafseth, H. J. Salmonella Infection Common to Man, Animals and Birds. *Rep. 46th An. Meeting U. S. Livestock Sanitary Assoc.*, 1942, p. 189.

25. Schofield, F. W. Salmonella Infections of the Domestic Animals. Their Relationship to Salmonellosis in Man. *Canad. Compar. Med. & Vet. Sci.*, 9:62 (Mar.), 1945.

26. Watt, James. An Outbreak of Salmonella Infection in Man from Infected Chicken Eggs. *Pub. Health Rep.*, 60:835 (July 20), 1945.

27. Simeone, D. H. Investigacion de Bacterias del Genero Salmonella en los Hueves de Aves. Buenos Aires Univ. *Inst. Inferm Infecciosas*, 2:35, 1944. (Exp. Sta. Rec., 82, 835, 1945.)

28. Edwards, P. R. Incidence of Salmonella Types in Fowls in the United States. *Proc. Seventh World's Poultry Congress*, 1939, p. 271.

29. Bornstein, S. The State of the Salmonella Problem. *J. Immunol.*, 46:439 (June), 1943.

UNRRA Educational Program in China

Jerome Sidney Peterson, M.D., M.P.H., Assistant Professor in the Department of Preventive Medicine and Community Health, Long Island College of Medicine, and District Health Officer of the Red Hook-Gowanus Health Center, New York City Department of Health, has been granted a leave of absence of one year with the United Nations Relief and Rehabilitation Administration in China. Dr. Michael Antell, formerly District Health Officer of the Washington Heights Health Center, has been appointed to serve in Dr. Peterson's place during the forthcoming year.

While with the UNRRA-China Mission, Dr. Peterson will serve with the commissioned rank of Surgeon (R) in the U. S. Public Health Service. His assignment will include the teaching of modern public health methods at the training center established at Chungking for physicians and other public health personnel from all parts of China. Dr. Peterson will also travel throughout China as Visiting Lecturer, to teach in the various regional centers which are now being developed. This educational program will emphasize the control of tuberculosis and other communicable diseases.

Dr. Peterson, who graduated from the College of Physicians and Surgeons, Columbia University, and received the M.P.H. degree from the Harvard School of Public Health, joined the Long Island College of Medicine Faculty in 1944.

Dr. Antell is an alumnus of the Long Island College of Medicine and also obtained the M.P.H. degree from the Harvard School of Public Health.

Need for a Public Health Program in Rheumatic Fever and Rheumatic Heart Disease*

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THE prime objective of all public health programs is the prevention of disease, disability, and death. In surveying the field of unmet public health needs from the point of view of this objective, it is immediately obvious that rheumatic fever and rheumatic heart disease have never received the attention which they deserve from public health workers. In planning postwar public health programs it is imperative that adequate attention be paid to this disease entity.

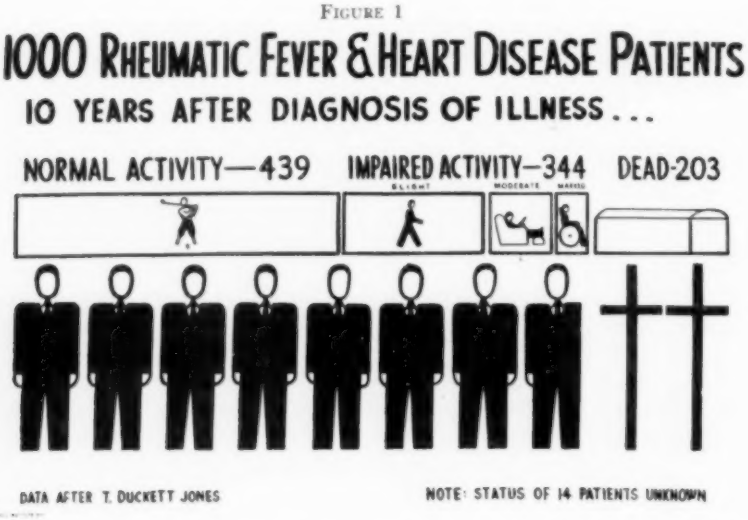
The entity rheumatic fever and rheumatic heart disease has been selected as the subject of this presentation because it is the commonest cause of mortality and disability in children and young adults.[1] It is a chronic disease punctuated by acute episodes of fever and inflammation of various organs of the body, particularly the heart, joints, blood vessels, skin, and brain. The seriousness of the disease resides in the fact that death occurs during acute episodes, and because the majority of patients who recover from acute attacks have permanent heart damage—so-called rheumatic heart disease.

The disease usually has its onset in early childhood. The largest number of patients have their initial attack at about the age of 8, although initial attacks not infrequently occur in adults. Attacks recur at frequent intervals until puberty is reached, at which time the attacks become less frequent. In this country the greatest seasonal prevalence is found in late winter and early spring. Rheumatic heart disease is the scar of acute rheumatic fever. The scar develops primarily on one of the heart valves, the mitral valve, and causes gradual obstruction to the flow of blood from the left auricle through that valve to the left ventricle. In addition the diffuse scarring of the heart muscle weakens that portion of the organ.

The prognosis of a patient who has had an attack of acute rheumatic fever may be learned from a study of the data compiled by Dr. T. Duckett Jones at the House of the Good Samaritan in Boston.[2] At that institution 1,000 children were followed for a period of ten years each, following the initial diagnosis of the disease (Figure 1). It was found that at the end of that period of time 203 were dead and 783 were living, 14 of the patients having been lost from observation. Of those who survived, 344 were forced by the residual heart disease to limit their activities; 135 of these were so incapacitated that they were forced to lead a sedentary existence; and 209 were restricted in that they could not participate in competitive sports. Only 439 were able to lead a completely normal existence. From our knowledge of the

* Presented before the Victory Meeting of The Public Health Association of New York City in collaboration with the American Public Health Association, New York, N. Y., December 14, 1945.

FIGURE 1


1000 RHEUMATIC FEVER & HEART DISEASE PATIENTS
10 YEARS AFTER DIAGNOSIS OF ILLNESS...
NORMAL ACTIVITY—439
IMPAIRED ACTIVITY—344
DEAD-203
DATA AFTER T. DUCKETT JONES
NOTE: STATUS OF 14 PATIENTS UNKNOWN

nature of the disease it is reasonable to expect that further mortality and disability will occur after the first 10 year period.

Another indication of the severity of the disease is the diminished life expectancy of sufferers from this disease. In figures compiled by Hedley for the year 1936 in Philadelphia [3] the average age at death of individuals with rheumatic fever or rheumatic heart disease was 36.5 years, in comparison to an average age at death of 55 years [4] for the general population of the same city in the same year (Figure 2).

The magnitude of the problem is great. The disease is a common one. Where surveys have been conducted, from 0.3 to 6 per cent of the childhood population, and from 0.6 to 1 per cent of the young adult population have been found to be afflicted with rheumatic heart disease.[5] This is similar to the prevalence of tuberculosis. The

FIGURE 2

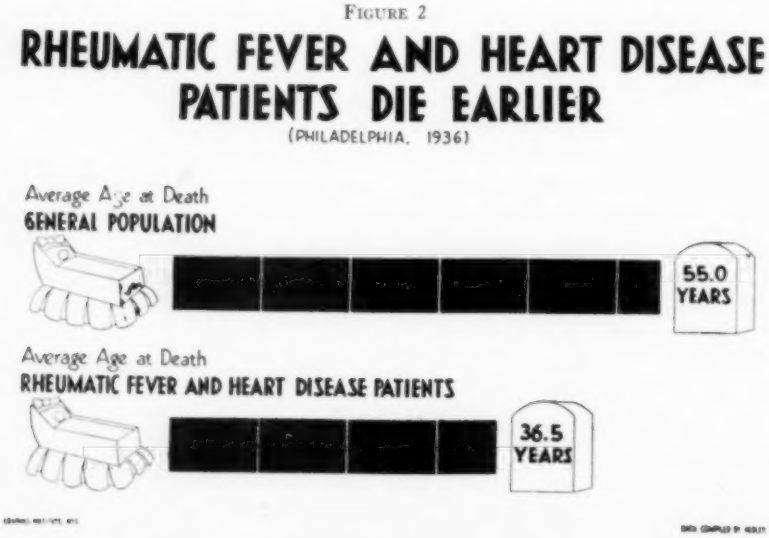
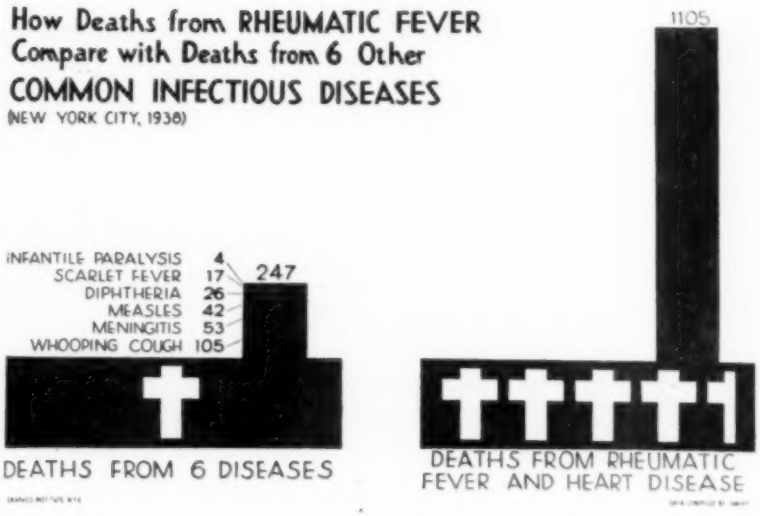


FIGURE 3



entity rheumatic fever and rheumatic heart disease is the commonest cause of death between the ages of 5 and 19 and the second commonest cause of death in the age group of 19–24.[1] Swift[6] has shown that the reported deaths from rheumatic fever and rheumatic heart disease in New York City in 1938 were 1,105 as compared with a combined total of 247 for pertussis, cerebrospinal meningitis, measles, diphtheria, scarlet fever, and infantile paralysis (Figure 3). In other words, in 1938 there were approximately five times as many deaths in this one disease as from a combination of six common reportable diseases in New York City in the same year.

Rheumatic fever has been a particularly prevalent disease in the military population during World War II. Figures released by the Office of the Surgeon General of the U. S. Army indicate that approximately 17,000 cases of rheumatic fever occurred in that branch of the service from January, 1941, until August 1, 1945.[7] The Bureau of Medicine and Surgery of the United States Navy has indicated that from the onset of the war up to January 1, 1945, 14,344 cases of rheumatic fever occurred in that branch of the service.[8] During the same period the Office of the Air Surgeon has estimated that thousands of cases occurred in the air forces,[9] although an exact figure has not been released. The majority of the attacks of rheumatic fever among members of the Armed Forces occurred in individuals who had no history of previous attacks of rheumatic fever. When one recognizes that rheumatic fever and rheumatic heart disease are chronic diseases, the expense to our government for the care of veterans who have acquired this disease while members of the Armed Forces may well be imagined.

During the past few years information has accumulated which has increased our knowledge of rheumatic fever. We have learned much concerning factors[5] which may be nonspecific, such as poverty, crowding, climate, dampness, and the detonating effect of an infection with the group A beta hemolytic streptococcus. At the present time this knowledge is not adequate to assure prevention of the disease or its specific treatment. Further research is badly needed.

In spite of our relative lack of knowl-

edge, much can be done to lessen the burden of this disease on the individual and on the community. Surveys of communities have revealed that a large number of agencies are already concerned with the rheumatic fever problem.[10] Such groups as practising physicians, hospitals and convalescent and foster homes, visiting nurse associations, organizations of medical social workers, school health agencies, housing authorities, private charitable organizations, local heart associations, occupational therapy services and governmental departments of welfare, education, and health are now concerned with the problem. In most communities these agencies are working earnestly, but in a completely haphazard fashion, with lack of coördination; and none of them individually is equipped to handle the entire problem. Since rheumatic disease is chronic, there is a tendency for patients to shop around and there is therefore endless duplication and waste in the use of community assets for the care of such individuals.

In addition to the administrative reasons already presented, there are a large number of clinical and epidemiological facts which indicate the need for the organization of a community rheumatic fever program. These include: difficulties in the diagnosis of rheumatic disease, the wide prevalence of the disease, the chronic nature of rheumatic disease with its impact on family life, the low economic level in which the disease is most prevalent, and the complexity of care necessary for the management of patients.

These individual factors deserve more detailed discussion. The difficulty of diagnosis of rheumatic fever is well known. Precise diagnosis is made difficult because the etiology of the disease is unknown, there is no specific diagnostic laboratory test, and the diagnosis in most cases is frequently dependent on a physician's impression of a group of nonspecific symptoms and signs. Many diseases have been confused with it. Among these are tuberculosis, anterior poliomyelitis, functional heart disease, influenza or grippe, undulant fever, inflammatory joint diseases, including rheumatoid arthritis, and other febrile diseases. This has resulted in wide variations in the diagnosis of rheumatic fever by general practitioners.[11] These points emphasize the great possibility of error in falsely diagnosing the disease in normal people, and the failure to diagnose the disease in the rheumatic patient. It is a serious matter not to diagnose rheumatic disease when it exists, but is is an even greater tragedy to apply the rheumatic label to a perfectly normal child. One of the greatest benefits which may be expected from a community rheumatic fever program is the removal of the label of rheumatic fever from patients inaccurately diagnosed.

Precise diagnosis in early cases requires many laboratory aids and much clinical experience with the disease. Even when all of these facilities are available, the diagnosis may still be difficult, particularly in early cases. In the Cardiac Classification Service of the New York City Department of Health, where school children are referred by a school physician for consultation and examination by a qualified cardiologist, one-third of the individuals admitted to the clinic leave with a diagnosis of either possible heart disease, potential heart disease, or possible and potential heart disease.[12] In other words, it is not possible for a qualified cardiologist to determine on one visit in one-third of the cases whether or not rheumatic disease is present. In such instances it is necessary for the patient to return and to be followed carefully at future examinations in order to determine whether or not the disease actually exists. In most cases this can usually be determined after a relatively short

period of follow-up. The experience of the Cardiac Classification Service is typical of that found in cardiac clinics throughout the country.

The familial prevalence of the disease plus its chronic nature places a very great burden on the family. Patients are prone to have recurrent attacks of rheumatic fever and require special care between attacks. Furthermore, the development of rheumatic heart disease imposes crippling and limitation of activity in a sizeable percentage of the cases. The fact that more than one individual in the same family may become afflicted with the disease contributes to the low economic level in which the disease is most prevalent. This low economic level implies poor, crowded, and damp housing, poor nutrition, and the frequent occurrence of other diseases, particularly respiratory diseases, in the same family. Where these factors exist, rheumatic patients cannot be properly handled at home, and may need foster and convalescent home services.

With all of these facts in mind I should now like to outline the organization of a program. First, there is need for a central integrating agency where all community facilities for the care and diagnosis of patients may be pooled. The registry of known rheumatic patients should be maintained at this agency. Of all community agencies, the health department is best suited for the performance of this function, and it may operate in exactly the same fashion as it does in the case of other crippled children's programs. The registry of known patients and a file of community facilities are the tools with which the program is integrated.

The arguments in favor of a registry as against a reporting system in the case of rheumatic disease have been outlined elsewhere [13] and will not be repeated in detail here. Briefly, it is felt that the requirement for reporting of rheumatic fever by the practising physician is not a desirable one. Accurate information concerning the prevalence of rheumatic disease and a useful current file of rheumatic fever patients can be obtained in a much more satisfactory manner through the use of a registry such as that of the London County Council Rheumatism Scheme.[14] Such a registry, complemented by a current file of available community facilities for the care of rheumatic fever patients, will provide a very satisfactory basis for program organization.

The next important need is medical service. Such service includes diagnostic, treatment, and follow-up facilities in the offices of private physicians, in clinics, hospitals, sanatoria, and convalescent homes. The use of the services of a cardiologist or of an approved cardiac clinic for the purpose of accurate diagnosis of this disease does not mean that the patient will leave the care of the private physician. On the contrary, the private physician should act as the initial screening agency, suspecting rheumatic fever whenever it may possibly exist. The consultant cardiologist or the approved cardiac clinic should then be available to him to provide him with accurate diagnosis of his case and with recommendations for proper follow-up of this chronic disease. Professional education of physicians should be directed toward lowering their threshold of suspicion of the existence of the disease and in verification or denial of the suspicion through the use of properly qualified consultants and clinics. The consultant and the clinic should also provide guidance to the physician in the complicated problem of prophylaxis against recurrences of the disease through the use of the sulfonamide drugs.

There should be available adequate facilities for case finding, particularly among siblings of known patients with

rheumatic disease. Such case finding services may be operated in collaboration with approved clinics. The organization of case finding services for rheumatic disease is similar to that of tuberculosis.

Nursing service will be necessary in clinics, hospitals, convalescent and foster homes, and in the home of the patient. Careful coördination of the activities of institutional and visiting nurses is essential.

Medical social service is important, since most patients suffering from rheumatic disease are in the lower income group. Such services should be designed to make community facilities fit the needs of the individual patient.

Provision should be made in the school health service for case finding, special classes, vocational guidance, and bedside teaching for institutionalized and bedridden patients. Where the cardiac damage is likely to cause permanent physical incapacitation, vocational therapy services are essential to aid the patient in becoming a useful citizen rather than a community liability.

Occupational therapy services will be necessary to maintain the morale of chronically bedridden patients.

It is necessary to plan and conduct a program of professional education for physicians, nurses, medical social workers, school teachers, and representatives of all agencies concerned in the rheumatic fever program. It is impossible to obtain complete coöperation on the part of the agencies concerned unless the agency representatives are familiar with the objectives and the plans of the program. Education of all these groups must, therefore, precede the organization of the program.

Lay education will be necessary to provide proper financial support for the program. Such education at first should be directed toward the general features of the disease and the magnitude of the problem. Education in the symptoms of the disease must await the development of proper diagnostic facilities. A great deal of anxiety in the minds of patients and relatives will be created if such education precedes the existence of such facilities. On the other hand, after adequate diagnostic facilities are established, lay education in the symptoms of the disease is important to assure a demand for medical care early in the disease.

There is a great need for additional information about rheumatic fever and rheumatic heart disease. Whenever possible the program should provide for research in the clinical and epidemiological features of rheumatic fever.

Finally, provision should be made for guidance and evaluation of the effectiveness of the program. Rheumatic fever programs are experimental, and the individual features of such programs should be carefully studied in order to determine whether or not they are necessary or need modification.

There are many details lacking in this outline of a community program. Some have been omitted because of the need for brevity. Many remain to be worked out. Coördination of rheumatic disease programs on a national level will facilitate this process and give impetus to the development of local rheumatic fever programs throughout the country. Since the coördination of a rheumatic disease program on a national level is so important, this presentation would not be complete without some reference to the American Council on Rheumatic Fever.

The need for coördination on a national level was recognized approximately two years ago when the American Heart Association called a conference of national organizations concerned with the problem of rheumatic disease. The American Public Health Association was one of the organizations represented at that conference. The members of the conference unanimously

adopted the following recommendations:

This conference is strongly in favor of the extension of public programs supported by federal, state, and local funds for the study, prevention, and treatment of this disease. Moreover, we believe it essential that additional funds be secured from private sources for the purpose of special studies to increase basic knowledge of the disease, for professional education, and for increasing public awareness of the problem.

In order to accomplish the purposes mentioned above, this conference recommends that a Council on Rheumatic Fever be formed under the leadership of the American Heart Association and that this Council shall include representatives of interested organizations.

Following the initial meeting, the American Council on Rheumatic Fever of the American Heart Association was formed, and included representatives of the following organizations: American Academy of Pediatrics, American Association of Medical Social Workers, American College of Physicians, American Heart Association, American Hospital Association, American Medical Association, American Nurses Association, American Public Health Association, American Rheumatism Association, and the National Society for Crippled Children.

The Council has been slow in getting under way because of difficulty in obtaining adequate financial support. This is due to the great lack of public awareness of the importance of the rheumatic disease problem. The initial program contemplated by the Council when funds are available is as follows:

1. Preparation of detailed plans for community rheumatic fever programs
2. Preparation and distribution of criteria for the diagnosis of rheumatic fever and rheumatic heart disease and of recommendations relating to treatment and convalescent care
3. Preparation of recommendations relating to undergraduate and graduate education of physicians and nurses
4. Plans for the initiation or sponsorship of research by individuals or groups
5. The preparation and adoption of a uniform method of evaluation of existing programs in rheumatic fever

The coöperation of the American Council on Rheumatic Fever with local voluntary and governmental public health organizations will do much to increase and codify our knowledge of the basic principles of community organization in the rheumatic fever program.

In summary, it is evident that the entity rheumatic fever and rheumatic heart disease poses a significant public health problem, and it is important that public health agencies meet this problem on the basis of established clinical and epidemiological facts in accordance with sound administrative principles.

REFERENCES

1. Armstrong, D. B. and Wheatley, G. M. *Studies in Rheumatic Fever.* Metropolitan Life Insurance Co., New York, Nov., 1944.
2. Jones, T. D. and Bland, E. F. Rheumatic Fever and Heart Disease; completed 10-year observations on 1,000 patients. *Tr. A. Am. Physicians,* 57:265–270, 1942.
3. Hedley, O. F. Mortality from Rheumatic Heart Disease in Philadelphia During 1936. *Pub. Health Rep.,* 52: part 2, 1907–1923, 1937.
4. Marks, H. H. Personal communication.
5. Paul, J. R. *Epidemiology of Rheumatic Fever and Some of Its Public Health Aspects,* 2nd ed. New York, Metropolitan Life Insurance Co., 1943.
6. Swift, H. F. Features Which Suggest Public Health Consideration of Rheumatic Fever. *Bull. New York Acad. Med.,* 16:501–513, 1940.
7. Office of the Surgeon General, U. S. Army. Personal communication.
8. Bureau of Medicine and Surgery. U. S. Navy. Personal communication.
9. Office of the Air Surgeon, U. S. Army. Personal communication.
10. Parker, M. E. Unpublished observations.
11. Rutstein, D. D. The Rôle of the Cardiac Clinic in the Rheumatic Program. *J.A.M.A.,* 126: 484–486 (Oct. 21), 1944.
12. Cardiac Classification Service, New York City Department of Health. Unpublished observations.
13. Rutstein, D. D. Chapter 12, "Lines Along Which Public Health Procedures May Develop." Paul, J. R. *Epidemiology of Rheumatic Fever and Some of Its Public Health Aspects,* 2nd ed. New York, Metropolitan Life Insurance Co., 1943.
14. Thornton, C. E. London Scheme for the Treatment and Supervision of Juvenile Rheumatism. *Acta rheumatol.,* 9:10, 1937. *Annual Report of the Council for the Year 1937.* London County Council, 1938, vol. 3, part 2. Bach, F., Hill, N. G., Preston, T. W., and Thornton, C. E. Juvenile Rheumatism in London. *Ann. Rheumat. Dis.,* 1:210, 1939. Schlesinger, B. Public Health Aspects of Heart Disease in Childhood. *Lancet,* 1:593 and 649, 1938.

Improvement of the Nasopharyngeal Swab Method of Diagnosis in Pertussis by the Use of Penicillin*

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IN 1929 Fleming [1] demonstrated the value of penicillin in the isolation of *Hemophilus influenzae*. When penicillin was incorporated in the culture medium or when an amount of from 2 to 6 drops of it was spread over one-half a Petri plate after the infected material, such as sputum or nasal mucus, had been streaked over the surface of the medium, the growth of the penicillin-sensitive organisms was so completely inhibited that *Hemophilus influenzae* often grew in practically pure culture. Fleming stated, "In addition to its possible use in the treatment of bacterial infections penicillin is certainly useful to the bacteriologist for its power of inhibiting unwanted microbes in bacterial cultures so that penicillin-insensitive bacteria can readily be isolated."

MacLean (1937) [2] used Fleming's technique for the isolation of *Hemophilis pertussis*. He applied from 6 to 8 drops of the strong penicillin solution to one-half of the Bordet's medium in a cough plate. Of 50 such plates exposed, 47 gave positive cultures for *Hemophilus pertussis* on the penicillin-treated side of the plate as against 33 positives obtained on the untreated side. When pharyngeal swab cultures, taken after a paroxysm, were treated with penicillin, from 75 to 80 per cent yielded positive results.

Cruickshank (1944) [3] applied 4 drops (15 to 25 Oxford units) of penicillin solution to the surface of Bordet's medium (12 ml. of medium per plate). Later, this amount was increased to 8 drops. The solution was distributed over the surface of the plate with a sterile glass spreader. After the plate was incubated for from ½ to 1 hour, it was inoculated with material obtained by swabbing the posterior pharynx with a bent swab passed through the mouth. Cruickshank found that such swab cultures were equally as effective as ordinary cough plate cultures without preliminary treatment with penicillin. He indicated that more care in the taking of the post-nasal cultures would probably have given better results.

The nasopharyngeal swab method for bacteriological diagnosis of pertussis, introduced in 1940, has proved to be superior to the ordinary cough plate method in our hands.[4, 5] This superiority has been confirmed by others.[6, 7] In using this technique a small loopful of 0.85 per cent sodium chloride solution is placed upon the surface of the medium and the charged swab is passed

* This work was supported in part by grants from the John and Mary R. Markle Foundation and from The Chatterbox Fund.

FIGURE 1—Showing the inhibiting effect of penicillin on the growth of contaminating organisms (right) to facilitate the identification of *Hemophilus pertussis* colonies on the surface of Bordet's medium. (Control plate is shown on the left.)

back and forth several times through the drop of saline. The plate is then streaked with a long, flexible loop.

In the present report are described the results of a series of cultures in which a loopful of penicillin solution containing 1,000 Oxford units per ml. was substituted for a loopful of 0.85 per cent sodium chloride solution. For comparison, cultures were taken chiefly from hospitalized patients during various stages of whooping cough, and plated simultaneously by the two methods.

RESULTS

The results shown in Table 1 clearly indicate that the use of penicillin facilitates the isolation of *Hemophilus pertussis* by inhibiting the penicillin-sensitive organisms that ordinarily appear on cultures made from the posterior pharynx.

The area of inhibition of the contaminating organisms, as usually observed, is well illustrated in Figure 1. Within this area a practically pure growth of *Hemophilus pertussis* is often observed. Moreover, the medium within this zone usually retains its original cherry-red appearance. After 3 days of incubation, the remainder of the medium is frequently discolored by the acid producing growth of contaminating organisms.

When too strong a concentration of penicillin is used, the growth of *Hemophilus pertussis* is inhibited. In spite of the fact that the organism is generally considered to be penicillin-

TABLE 1

Results of 95 Simultaneous Nasopharyngeal Swab Cultures from 52 Cases of Pertussis

Age Years	*Number Patients*	*Number of Positive Cultures*	*Number of Negative Cultures*
Penicillin			
Under 2	20	47	2
2–14	28	38	1
Over 15	4	7	0
Total	52	92 (97.6%)	3
0.85% NaCl			
Under 2	20	42	7
2–14	28	26	13
Over 15	4	7	0
Total	52	75 (76.8%)	20

Difference in Percentage of Positive cultures 20.8
Standard error of the difference 4.6
Ratio of difference in Percentages to its S.E. 4.5 to 1

insensitive, our observations indicate that it is sensitive to strong concentrations. This effect occurs *in vivo* as well as *in vitro*, for we have observed in certain experiments a significant clearing of the organism from the lungs of experimentally infected mice treated with penicillin.

Two interesting, and probably significant, findings appear in our data. First, the penicillin treated cultures gave better results than the saline treated cultures in the age groups above infancy (Table 1). (The superiority of the nasal swab method was originally observed to exist in cultures taken from infants.) Second, such cultures are more efficient after the catarrhal period of the disease (Table 2); for example, 13 of the 20 negative control cultures were obtained in the later stages of the disease when the number of organisms is usually less.

TABLE 2

Distribution of Negative Cultures According to the Stage of the Disease

	Number of Negative Cultures	
Stage of Disease	*Penicillin*	*0.85% NaCl*
Catarrhal (1st and 2nd week)	2	7
Paroxysmal (3rd and 4th week)	1	7
Decline (5th and 6th week)	0	6

SUMMARY

By means of a technique in which a charged post-nasal pharyngeal swab was moistened with a loopful of penicillin (1,000 Oxford units per ml.) and placed upon the surface of Bordet's medium, a high percentage (97.6 per cent) of positive cultures of *Hemophilus pertussis* was obtained from patients in various stages of whooping cough. Cultures taken in the same way except for the substitution of 0.85 per cent sodium chloride solution for the penicillin, yielded a significantly lower percentage (76.5 per cent) of positive cultures.

REFERENCES

1. Fleming, A. On the Antibacterial Action of Cultures of Penicillium, with Special Reference to Their Use in the Isolation of *B. Influenzae*. *Brit. J. Exper. Path.*, 10:226, 1929.
2. MacLean, I. H. A Modification of the Cough Plate Method of Diagnosis in Whooping Cough. *J. Path. & Bact.*, 45:472, 1937.
3. Cruickshank, R. Post-nasal Swab in Diagnosis of Pertussis. *Lancet*, 1:176, 1944.
4. Bradford, W. L., and Slavin, B. Nasopharyngeal Cultures in Pertussis. *Proc. Soc. Exper. Biol. & Med.*, 43:590, 1940.
5. Brooks, A. M., Bradford, W. L., and Berry, G. P. The Method of Nasopharyngeal Culture in the Diagnosis of Whooping Cough. *J.A.M.A.*, 120: 883, 1942.
6. Miller, J. J., Jr., Leach, C. W., Saito, T. M., and Humber, J. B. Comparison of the Nasopharyngeal Swab and the Cough Plate in the Diagnosis of Whooping Cough and *Hemophilus Pertussis* Carriers. *A.J.P.H.*, 33:839, 1943.
7. Bullowa, J. G. M., Buxbaum, L., and Scheinblum, I. E. Pertussis: Bacteriologic and Agglutination Studies. *J. Pediat.*, 25:299, 1944.

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Post-war Training Problems in Public Health*

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A LETTER recently received by the Public Health Service reads in part as follows:

"Please send me a list of full- and part-time public health positions available to physicians about to be discharged from the armed forces. I am a pediatrician and want to get into public health work."

Another letter reads as follows (this is from Iwo Jima):

"I have served in the hospital corps of the Navy over three years, during which I received a course of instruction in malariology at the Navy Medical School. I have been overseas working with a malaria and epidemic control unit for 15 months. I have had two years of university training. Any information that you can send me that will help me plan a career in public health will be greatly appreciated."

These two letters, selected from many, indicate one of several reasons why Surgeon General Parran believed it necessary to appoint a Committee on Post-war Training of Public Health Personnel.

The first letter is from a physician. He wants to get back into the public health field. But where? What are the openings? The second letter is from a pharmacist's mate, first class, who has had some college training. For several years he has been engrossed in a very practical and useful job, malaria control. Where does he fit into the civilian public health picture? Is there some way we can salvage this valuable experience? Should he seek a health department connection in a community that has a malaria problem? Or should he go back to college and get his degree? There is no malaria problem in his home state. His talents are most needed in the South. But to get a job in some areas of the South or in some areas in the North or West for that matter, he must be a resident of the state. What then? If he decides to go back to school, he can get some financial aid through the G-I Bill of Rights, tuition up to $500 a year and subsistence allowance up to $90 a month. But with a wife and two children, he must think twice.

The pharmacist's mate needs more schooling if he wants to advance in the public health field. He has had some practical training.

The pediatrician needs professional training in a school of public health if he expects to go into public health work as a career. The pediatrician is the more fortunate one. He has not only his G-I Bill of Rights financial aid, but he also is in line for federal grant-in-aid funds which the states can spend for professional training, and which can be used to supplement the G-I Bill of Rights allowance up to a top of $250 a month. But he must first be appointed to a state or local health department to be eligible for grant-in-aid funds. There may or may not be a vacancy in his home state. And even if there were a

* Presented before the Victory Meeting of The Public Health Association of New York City in collaboration with The American Public Health Association in New York, N. Y., December 13, 1945.

vacancy, his home state may not have asked for funds for training a physician in a school of public health. What then? Cannot the Public Health Service provide grant-in-aid funds for a fellowship? No, the grant-in-aid funds are for allotment to the states. If the state does not ask for funds for training, then there is no way for the Public Health Service to use these funds for training.

Inquiries of this nature are important, and there have been hundreds of them coming in to the Public Health Service and the American Public Health Association, which is coöperating with the Service in this program. The solution of the problems raised by these letters is even more important. They are important because the state and local departments of health in this country are desperately in need of trained personnel.

The Public Health Service made a survey of these departments in the summer of 1945. This discloses that of 29,000 established positions, 6,500 vacancies existed. Forty-five per cent of these vacancies are being held for former employees who went into the armed services. The remaining vacancies, numbering 3,600, call for new personnel. Among these new persons needed in state and local health departments are 2,000 public health nurses, 425 health officers and medical administrators in special fields, 140 public health engineers, 400 laboratory workers, and 400 sanitary personnel other than engineers.

But even more new people are needed than shown above. Public health workers in health departments are retiring each year as they reach the age limit, and even younger people are leaving the field from time to time for one reason or another. Thus we need annual replacements. The exact number is unknown, but at the minimum it would be at least 1,700. Nor have we included above the new persons who will be needed as public health work expands, nor the new individuals and replacements needed in voluntary health agencies and in school health work carried on by boards of education. Thus instead of 3,600 new persons who are known to be needed in state and local health departments as disclosed by the aforementioned survey, the total number of new personnel to whom public health is beckoning is nearer six or seven thousand.

Another reason why these letters from distant military camps in this country and from Iwo Jima, Okinawa, the Philippines, Hawaii, and elsewhere are important is that this present period of demobilization offers an unprecedented opportunity to recruit staff for public health. Many men and women, particularly those who entered the military service directly from college or medical interneship or dental, nursing, and engineering schools, are poised on the brink of a decision as to their future career. The present is a dividing line between a war era and an era of welcomed peace. What to do? Now is the unique time to make known to returning veterans the needs and the attractions of a public health career.

But public health calls in the main for professionally trained persons. The untrained person who enters the field will find himself thwarted as the years roll by and as he looks forward to advancement and salary increase to solve the worries of a growing family, increased expense, and responsibilities. Professional training will facilitate the climb up the ladder.

There is already a surge to training institutions. The G-I Bill of Rights will help in the financing, and for employees of state and local health departments, the federal grants-in-aid to states will also help in professional training. But for men and women just out of the military service, who have

never been employed in state or local health departments and who want to enter this field, the grant-in-aid funds are not so widely available. Questions of residence, the number of existing vacancies in an individual state, and available funds for training in the specific state enter the picture. The applicant is sometimes blocked in finding an opportunity for training.

In order to surmount these obstacles the private foundations have been asked to lend their assistance with fellowships for the next two years so that the orderly flow of eager applicants to professional training institutions may not be obstructed and the full advantage of this unusually favorable period for recruitment may not be wasted.

If so many flock to training institutions—will there be room for all? Have we the capacity to absorb the load? The capacity of the eight schools of public health in the Association of Schools of Public Health is estimated to be less than 500 students as candidates for the degree of Master or Doctor of Public Health, and 500 more with other types of training, including short-term courses. The probable load of degree candidates may be estimated as 600 a year for the next three years, after which it may lighten somewhat. This includes about 260 physicians to be trained annually as health officers and administrators of special services.

There are 2,000 positions in public health nursing to be filled by new staff in state and local health departments alone. This number, together with replacements for nurses retiring or leaving positions in state and local health departments, as well as local boards of education and voluntary agencies, raises to 3,500 the number of positions which should be filled before another year. Schools of public health nursing will be faced with the task of training between 2,000 and 3,000 nurses annually in the years immediately ahead.

The Surgeon General's Committee is acting as a clearing house, trying to establish a through connection between demobilized veterans on the one hand and training and jobs on the other. But establishing such connection is not enough. The committee believes that the training problem itself deserves much thought. What kind of training? How much training? Should academic professional training, at least for a physician, be preceded by an orientation period of training? Here the trainee working temporarily in a state or local health department under supervision but without administrative responsibilities, can have a chance to learn the problems, to get the feel of the job, and to see whether he is going to like it. Here, also, the potential employer can size up his prospective employee to see whether he is worth an additional investment in professional public health training.

Academic professional training is essential, but it is a sheltered life. While the student health officer has been acquiring his master's degree in public health, presumably he has been given the theoretical instruction on how to swim in both the charted and uncharted waters which he may encounter. Would it not be a good idea for him to practise swimming for a while under close supervision in a going health department and have a try at buffeting the waves of practical situations and realistic health administration before being turned loose to be skipper of his own crew and master of his boat? Field training smooths the path between the vine covered buildings and the administrative vocation of health officer.

Even what goes on within the college walls has been discussed by the committee. What subject matter should be taught in a school of public health? Years ago, Charters and Hindman,[1] after a detailed study concluded that the duties of a public health commis-

sioner "seem preponderatingly to be administrative, executive, educational, and personal." In the training of health officers, they state further that "those duties will have preference in a curriculum which have the widest range, occur most frequently, are most difficult to learn, and are of most crucial importance when they do occur." The Surgeon General's Committee — which includes the deans of two schools of public health—has a feeling that such subjects as health education (adult and school), personnel administration, business administration and administration of medical care programs have yet to be given adequate attention in the curriculum.

The schools of public health are performing a magnificent service not only for the local students but for students who come from all states and from many foreign countries. These schools are rendering a service to the nation, for their students are being trained primarily for public positions to protect the health of the nation. They are contributing to good international relations in the training for leadership that is being given to foreign students. But they lose a thousand dollars annually on every degree student. Federal aid directly to the schools themselves to help support their faculty and administration would be fully justified.

There is a big job ahead of us in the next few months. It calls for the closest coöperation between public and private health agencies on federal, state, and local levels. The keen interest of the schools of public health is a necessity. Financial support from the foundations to meet the emergency problems is needed. The steps already taken are beginning to bring results—not many as yet—but enough to show that we are on a promising course.

Another letter, this one from a physician mustered out after four and a half years in the Army, is an example of what I mean.

"My application has been accepted at the ..... School of Public Health. I am happy to say that I shall be starting school there in a few days. After I get my degree, I shall want to write you again for further advice."

In this instance, a through connection has been established between the demobilized veteran and his training.

REFERENCE

1. Charters, W. W. and Hindman, Darwin H. The Duties of Ohio Public Health Commissioners. *Bureau of Educational Research Monographs, No. 17*, Ohio State University, Columbus, Ohio, 1933, pp. 11–12.

Results from the Current Mortality Sample

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AS 1945 came to an end, the United States could chalk up on the credit side of its vital statistics ledger for the year freedom from major epidemics, a continuation of general mortality at a level comparing favorably with that for the previous year, and a further reduction in the mortality from a number of the important causes of death. Despite the high wartime birth rate and the heavy load carried by hospital personnel and facilities, both the infant and maternal mortality rates gave promise of reaching new record lows in 1945. The death rate for respiratory tuberculosis which had been watched apprehensively since the beginning of the war continued its almost unbroken decline into 1945. In the winter of 1944–1945, the death rate for pneumonia approached, if it did not actually reach, an all time low for the season. Of the infectious diseases common in childhood, the death rate for measles reached a cyclical low and that for cerebrospinal meningitis, which had been in epidemic phase for the two preceding years, dropped in 1945 toward the trough of its periodic cycle. Deaths from accidents other than motor vehicle accidents, which had increased among males at the beginning of the war, declined in 1945, a part of the decrease being due to a sharp reduction in deaths from air transport accidents among men in military training.

On the other side of the ledger, the most dramatic change occurred in the death rate for motor vehicle accidents. In relation to its wartime level, the death rate for motor vehicle accidents rose in 1945, slowly at the time of VE-day and rapidly following VJ-day and the end of gasoline rationing. By October the rate was about one and a half times as high as in the same month of 1944, and the outlook for the first year of peace was the highest motor vehicle accident death rate since 1942. There was also some indication that the decline which occurred in the death rate for suicide during the war (from 14.3 per 100,000 population in 1940 to 10.0 in 1944) came to an end in 1945.

These observations regarding some of the significant developments in mortality in the United States during 1945 are based upon the provisional figures which were obtained from a 10 per cent sample of death certificates. A final accounting of all registered deaths in the country will be available toward the end of 1946 when the records for all registered deaths have been received and tabulated in the Bureau of the Census.

The program for obtaining cause-of-death statistics for the United States on a current basis by means of sampling was set up in 1942 by the Bureau of the Census with the coöperation of state and city* vital statistics offices. In 1943 the sampling area included 46

* The four independent registration cities are Baltimore, Boston, New Orleans, and New York.

states and the District of Columbia, and in 1945 it covered the entire continental United States. The purpose of this paper is to describe the program and its results.

HOW THE SAMPLE IS TAKEN

In the ordinary course of events, vital records flow from their points of origin in the local registration districts where the births or deaths occur into the state vital statistics offices and thence in the form of copies or transcripts to the Bureau of the Census. In most states, shipments of certificates from the local registrars arrive monthly in the state office, the local registrars being required by law to send in by the 10th of each month the certificates that were filed with them during the previous month. After the certificates have been queried and processed for state use, they are copied for the Bureau of the Census. When transcripts of all registered deaths occurring in a calendar year have been received in the Bureau, usually by the fifth month of the following year, tabulations can be made on a national basis.

The current mortality sampling program taps this stream of vital records in the state office on about the 20th of each month. The certificates drawn in the sample are copied immediately and the transcripts are sent to the Bureau of the Census where the processing of the data is given high priority so that the results may be released for use within less than 2 months from the close of the period in which the deaths occurred.

The sample is taken by selecting every tenth death certificate received between two dates a month apart.[1] In most states, on the sampling date, the certificates that have been received are together in a temporary file, arranged in a definite order usually by county or registration district. The sample is then drawn by taking every tenth death certificate in the file.

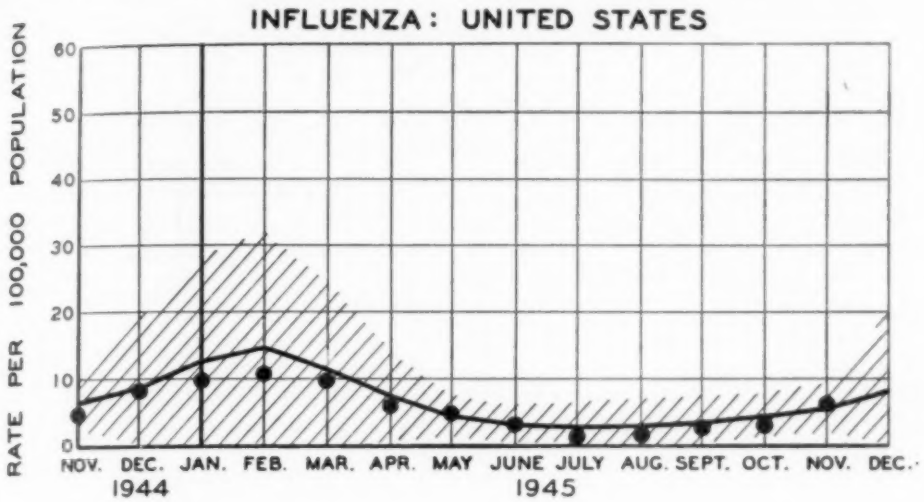
The monthly sampling date is set for the time at which it can be anticipated that practically all local registrars will have sent in their certificates for the previous month. Thus, it may be expected that the group of certificates received between two sampling dates, say the 20th of March and the 20th of April, will consist almost entirely of certificates for deaths occurring in March. Usually some certificates for deaths in earlier months will be included and some for March deaths will be missing. However, it has been found that the stragglers for earlier months tend to balance those for the current month still outstanding,[2] so that no serious error is involved in taking the data received between two sampling dates as an index of the events which occurred during a calendar month.

CURRENT MORTALITY ANALYSIS

The tabulated returns from the sample are published monthly in a four page release, *Current Mortality Analysis*. This regularly includes a graphic presentation of the results as well as a discussion of the returns for the month and several tables giving the number of deaths in the sample and death rates by cause and by age and race for the United States and its major subdivisions.

The question of how the returns from the sample may be presented in a useful form is of great importance. One of the chief functions of current mortality statistics is to give prompt warning of any change in the underlying force of mortality in the community. However, it may be hazardous in the extreme to draw any conclusion on the basis of a single month's rate. While 95 times out of 100 the month's death rate for cancer in the United States may be estimated within 6 per cent of its actual value, for a number of causes it may be necessary to estimate the rate from so small a number of deaths that by chance alone the estimate could

Variation Chart Showing Actual, Expected and Expected Variation of Death Rates from Influenza from Mortality Sample for United States for November, 1944–November, 1945



deviate from the actual rate by 50 per cent or more of its value.* Further, recognizing that even the complete death experience in an area during a given period of time is still only a sample of an underlying infinite universe, representing the forces of mortality in the community, account must also be taken of the "normal" variation in the monthly rate, that is, the fluctuation which cannot be attributed to epidemic or cyclical origin or to secular or seasonal movement.

Extensive use is made in *Current Mortality Analysis* of a type of graph which has been named "variation chart." Its purpose is to enable the reader to take in at a glance, and in relation to a base, the movement of the death rate over a period of some months and to assist him in evaluating the significance of a deviation in the current rate from this base.

As may be seen in the figure, a variation chart has three chief elements. These are: (1) dots which represent the values of the monthly death rates as estimated from the sample, (2) a heavy central line which represents the "expected" rate, and (3) a shaded band which is intended to indicate the range about the expected rate within which the rate estimated from the sample may vary without necessarily implying a change in the underlying force of mortality.

The methods used in constructing the variation charts and the assumptions on which they are based have already been described in some detail.[3] However, it may be said here that the expected rate for a cause for a particular month and year is obtained by projecting the long time upward or downward movement found in a time series of death rates for that cause and applying to the projected trend value an index of seasonal variation. For causes displaying a marked secular trend, the expected rate has a marked advantage over some average of past experience such as a median or mean as a base with which to compare the current rates obtained from the sample. The limits of the shaded area, computed from estimates of both the sampling variance and the

* In practice, the sampling variance is computed from the formula for a random sample taken without replacement.

"normal" variance,* are designed as far as possible so that under normal circumstances a rate will fall only infrequently above the upper limit.

EVALUATION OF THE RETURNS FROM THE SAMPLE

A continuous evaluation of the returns from a sample drawn in 53 separate offices is of the utmost importance. Fortunately a considerable measure of control can be exercised over the sampling process currently as the sample transcripts are received in the Bureau.

The two most common errors in taking the sample are: (1) the drawing of a number of certificates equal to 10 per cent of the deaths plus stillbirths instead of 10 per cent of the deaths alone (an error which may occur in situations where the records of stillbirths are filed with the certificates of death), and (2) taking 1 out of 10 of the certificates for deaths occurring in the current month instead of one-tenth of all the certificates received regardless of the month in which death occurred. The first type of error, giving too large a number in the sample, may usually be discovered by comparing the number of transcripts in the sample with the total number of deaths reported concurrently for the *Monthly Vital Statistics Bulletin*. The second type of error, causing the number in the sample to be too small, becomes apparent when the transcripts are distributed by month of occurrence of the deaths.

In contrast with the majority of sampling situations in which the parameters of the population are never known, the returns from the current mortality sample may be matched in due course of time against the 100 per cent statistics as finally tabulated. The table gives the number of deaths for various causes, as estimated from the sample, for 44 states and the District of Columbia in 1943 and the corresponding numbers for the same area as tabulated from all registered deaths for the year.

Good agreement is found between the estimated and the final numbers of deaths for the majority of causes listed in the table. Among these are the infectious enteric diseases, the several infectious diseases common in childhood, tuberculosis, influenza, cancer, pellagra, the puerperal causes, and possibly diabetes and syphilis.

On the other hand, the number of deaths for several causes as estimated from the sample are found to differ significantly from the number as finally tabulated. The 1943 sample yielded an overestimate of the number of deaths for pneumonia and for the group of diseases of the cardiovascular-renal system. While the differences may not appear large (less than 3 per cent in the case of pneumonia and about 1 per cent for the cardiovascular-renal group), they are greater than could safely be attributed to chance ($P = <.05$). Further, the 1943 sample yielded underestimates of the number of deaths from suicide, homicide, motor vehicle accidents, and all other accidents.

A deficiency in the number of deaths in the sample from violence and accidental causes was not unexpected in the first year of the sampling program. Where the determination of the cause of death is a subject for a coroner's inquiry, there is necessarily a lag between the date of death and the time at which the certification of the cause of death reaches the state vital statistics office. Consequently, in those instances where provision is not made in the regular office procedure, great care is required to make sure that every certificate for a death from violence or accident has an opportunity to be sampled. The excess in the number of deaths in the sample

* A third term has been included which in most instances represents a negligible proportion of the total variance represented in the shaded area.

TABLE 1

Number of Deaths from Selected Causes, Tabulated from Final Figures and Estimated from the 10 Per cent Mortality Sample: 44 States [1] and the District of Columbia, 1943

(Place of Occurrence)

Cause of Death	*Final*	*Estimated*	*Percentage Difference*
All causes	1,324,917	1,327,560	0.2
Infectious enteric diseases	12,285	12,610	2.6
Typhoid and paratyphoid fever	555	590	6.3
Dysentery	1,339	1,480	10.5
Diarrhea and enteritis	10,391	10,540	1.4
Prevalent diseases of childhood	10,476	10,500	0.2
Cerebrospinal meningitis	2,790	2,760	−1.1
Scarlet fever	422	450	6.6
Whooping cough	2,811	2,890	2.8
Diphtheria	948	940	−0.9
Measles	1,171	1,280	9.3
Poliomyelitis	954	990	3.8
Acute rheumatic fever	1,380	1,190	−13.8
Tuberculosis (all forms)	50,756	50,920	0.3
Malaria	425	560	31.8
Syphilis	14,589	15,260	4.6
Pneumonia and influenza	80,747	83,120	2.9
Pneumonia (all forms)	65,643	67,420	2.7
Influenza	15,104	15,700	3.9
Cancer and other malignant tumors	153,923	154,140	0.1
Diabetes	33,916	34,980	3.1
Pellagra	845	930	10.1
Diseases of the cardiovascular-renal system [2]	601,106	607,080	1.0
Puerperal causes	6,219	5,960	−4.2
Suicide	12,708	11,690	−8.0
Homicide	5,447	4,970	−8.8
All accidents	88,385	83,940	−5.0
Motor vehicle accidents	21,371	19,280	−9.8
All other	67,014	64,660	−3.5
All other causes	253,090	250,900	−0.9

[1] States excluded are: Arkansas, Georgia, Minnesota, and Texas.
[2] Excludes arteriosclerosis and high blood pressure (idiopathic).

from pneumonia and diseases of the cardiovascular-renal system may likewise be traced to specific errors in taking the sample. It is fortunate that this is so, for where a bias is due to an error in taking the sample, the error can be localized and the bias eliminated or reduced. It may be of interest to mention that in two instances the error in sampling was discovered before the data became available for this comparison.

BY-PRODUCTS OF THE SAMPLE

Since the sample contains all the detail available in the 100 per cent statistics, and since the sample design permits classification of the data along any axis, the use to which the sample has been put extends beyond its primary function of giving prompt intimation of gross changes in the death rate for a specific cause. The punch cards accumulated from each month's sample have been combined in various ways and reshuffled for various purposes.

One purpose is to supply federal and other agencies with current statistics beyond those regularly published in *Current Mortality Analysis*. Special tabulations are regularly run each month for a number of federal agencies and others have been made upon request.

The flexibility of the sample, its relative cheapness, and the promptness with which it can be utilized, make it pecu-

liarly adapted for use in situations where it would be impractical, if not impossible, to obtain the required data from the regular tabulations of the 100 per cent statistics. To incorporate an additional item in the regular tabulation program involves not only the cost of coding and punching the item for almost one and a half million records, but requires that it be planned for about a year and a half in advance. Within the limits imposed by the sampling error, the same results may be obtained from the sample, with little delay, and often at less than one-tenth of the cost. This was illustrated on the occasion when the question arose in connection with a pressing administrative problem as to what proportion of the persons dying in each state had been born in that state. To obtain the information, all that was necessary was to take the sample data for 2 months, code and punch state of birth, and retabulate the cards.

At the present time, a number of special items which are not included in the program for tabulating all registered deaths are being coded and punched regularly from the sample returns. These are: year of birth, length of stay in hospital or institution, associated cause of death, and state of birth. Year of birth is punched for the purpose of obtaining factors required in the construction of life tables, which may be used in distributing the number of children dying at each year of age according to the two possible years of birth. The item, length of stay in hospital or institution, has been introduced for the purpose of determining whether it is sufficiently well reported that it could be used in studying the relation of length of hospitalization to cause of death and to type of institution. In punching the associated as well as the primary cause of death it is hoped that it will be possible to collect in time a useful body of data on the characteristics of those decedents whose deaths are attributed to more than one cause.

REFERENCES

1. Bureau of the Census. *Procedures for Current Mortality Sample, 1945*, Feb., 1945.

2. Bureau of the Census. *Evaluation of Provisional Vital Statistics from the Monthly Vital Statistics Bulletin, 1937–1942*, Vital Statistics—*Special Reports*, Vol. 19, No. 22, 1945.

3. Bureau of the Census. *Description of Methods Used in the Construction of Variation Charts for the Current Mortality Analysis*, Vital Statistics—*Special Reports*, Vol. 17, No. 26, 1943.

The Whole Person

"Today when the medical profession has just about abandoned the effort to cure people by applying specific remedies to their various 'symptoms' and has about learned to think of the organism as a whole, the operation of many specialized health agencies produces essentially the effect of dealing with isolated aches and troubles rather than with the whole person, to say nothing of the whole public."

Gunn-Platt Report, *Voluntary Health Agencies*, National Health Council, 1945.

A Group of Paracolon Organisms Having Apparent Pathogenicity*

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THERE is a large number of heterogeneous coli-like organisms which, having certain physiological characteristics unlike typical *Escherichia*, have been grouped together as paracolon bacilli.[1] Taxonomically they may be considered as occupying a position intermediate between the typical coliforms and the salmonellas.[2] A few sub-groups of paracolon organisms have been described and their importance noted.[2-4] It is the purpose of this communication to describe briefly the characteristics of another sub-group of paracolon bacilli isolated during a small outbreak of gastroenteritis.

FEATURES OF THE EPIDEMIC

On May 13, 1944, it became apparent that an unusual number of cases of diarrhea were occurring in certain wards of a United States Naval Hospital and investigative procedures were instituted; clinical and epidemiological information was obtained by interviewing 219 patients and staff members. The illness was relatively mild. Only 1 of the 52 patients who were attacked exhibited blood in the stool, while 1 other had fever that was attributable to the disease. In almost all cases recovery was complete within 12 hours; 92.3 per cent of the cases had diarrhea, the number of diarrheal stools per case averaging 4.8. Percentages of patients with other signs and symptoms were: abdominal cramps, 75.0; nausea, 50.0; and vomiting, 11.5.

Statistical analysis implicated corn pudding as the probable vehicle of the etiologic agent. It was found that this "left-over" food had been substituted for rice in the evening meal the previous day and that it was sent on food carts to the wards affected. As is the case all too frequently, no samples of the corn pudding were available for bacteriologic study. The incubation period averaged approximately 12 hours after eating the suspected food.

BACTERIOLOGIC STUDIES

Stool or rectal swab specimens for culturing were secured from 17 of the 52 patients; both types of specimens were obtained from 2 subjects and all 4 yielded positive results. All specimens were plated directly onto Difco S S agar and B-B-L Desoxycholate-Citrate agar and also were inoculated into the modified tetrathionate enrichment medium of Kauffmann.[5] After 18 to 24 hours' incubation at 37° C. apparently non-lactose-fermenting colonies were transferred from the plates to agar slants, and plates of S S agar were streaked from the tetrathionate broth cultures. The following morning suspicious colonies were picked from these plates. In all, 28 single-colony

* The opinions or assertions contained herein are the private ones of the writers and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

cultures of the organisms to be described were obtained from 12 of the 17 patients. No other cultures thought to bear an etiologic relationship to the outbreak were found.

Fermentative characteristics of the cultures were studied in glucose, lactose, sucrose, mannitol, xylose, maltose, rhamnose, dulcitol, arabinose, inositol, trehalose, salicin, sorbitol, cellobiose, adonitol, levulose, galactose, mannose, inulin, glycogen, raffinose, milk, and d-tartrate. In addition, the Imvic reactions and hydrogen sulfide production were determined and motility was studied in semi-solid agar.[5] The results of these studies are as follows:

Acid and gas produced in 1 day (all cultures): glucose, mannitol, maltose, rhamnose, dulcitol (one strain remained negative for 23 days), arabinose, trehalose, sorbitol, levulose, galactose and mannose.

Delayed production of acid or acid and gas (all cultures): lactose (2 to 6 days); cellobiose (4 to 9 days).

No visible reaction in 21 days or more (all cultures): inositol, adonitol, inulin, glycogen, and raffinose.

Variable reactions: sucrose, 8 strains were negative for 21 days but the balance produced acid and gas in 1 day; xylose, 3 strains produced no change in 21 days while the remainder produced acid and gas in 1 day; salicin, 11 strains formed a slight amount of acid or acid and gas in 10 to 21 days but the other cultures remained negative for at least 3 weeks.

In B-C-P milk all strains produced a slight acidity that increased slowly during the period of incubation and eventually 5 cultures produced coagulation; all cultures tested were positive in d-tartrate. All cultures produced large amounts of H_2S, were actively motile, and the Imvic reactions for those studied were $--++$; Koser's citrate solution was the medium used in the last test. Gelatin was not liquefied by any culture during 10 days' incubation. As can be seen, observations made early in the period of incubation of the cultures show a similarity to the characteristics of the *Salmonella* group but further incubation elicits the traits typical of the paracolon organisms.

In order to test the pathogenicity of the cultures, 5 different strains were injected intraperitoneally into white mice in a dosage of 0.5 ml. of saline suspension prepared from agar slants. Three groups of 3 mice each received sucrose-positive strains and 2 groups of 3 mice each received sucrose-negative cultures. Thirteen mice were dead within 24 hours after injection and the other 2 were obviously ill. Cultures made from the heart's blood of the 9 mice which were autopsied yielded pure cultures of organisms having biochemical reactions identical with those injected.

Drug susceptibility of 1 sucrose-negative and 1 sucrose-positive strain was demonstrated by complete inhibition of growth of the organisms when streaked onto plates of agar containing 5 mg. per cent of sulfathiazole; 1 mg. per cent of the drug in agar resulted in 70 to 90 per cent inhibition of growth.

SEROLOGIC STUDIES

Antisera were prepared in rabbits for one of the sucrose-negative and one of the sucrose-positive strains, using formalinized broth cultures as antigens. Sera with high titers for homologous H antigens were obtained. Of some interest, however, is the fact that while use of the sucrose-negative strains resulted in a very high titered serum for the O antigen, the sucrose-positive strain was weakly antigenic in the single rabbit used. Alcohol-heat prepared O antigens[6] of 23 of the 28 strains reacted strongly with appropriate dilutions of both sera. Strangely enough, 5 sucrose-negative strains reacted only with the sucrose-positive serum. For-

malinized broth cultures of 24 strains used as H antigens [6] agglutinated well in a 1:1,000 dilution of serum for the sucrose-negative strain, while 4 strains reacted only with serum for the sucrose-positive strain; no strain reacted with both sera at a dilution of 1:1,000. It appears, therefore, that these epidemic strains are serologically related; their exact relationship to each other and to other Enterobacteriaceae will depend upon extensive antigenic analyses.

Blood samples obtained from 10 of the patients on the second day and from 5 of the same patients on the tenth day following the outbreak failed to reveal significant agglutinin titers when the sera were tested against 3 of the strains. Unfortunately it was not possible to continue these tests further but it is unlikely that agglutination titers would have shown appreciable increases since the illness was transient and there was no evidence of blood invasion.

INCIDENCE AND DISTRIBUTION

Subsequent to the recognition of this paracolon sub-group additional strains have been identified; they have been isolated from subjects who were asymptomatic at the time of culturing, from sporadic cases of diarrhea, and at least one other epidemic. In the two latter categories evidences of etiologic relationships were strong. Further details concerning the known distribution of the organisms will be given in a later report.

SUMMARY AND CONCLUSIONS

A group of biochemically and serologically related organisms was isolated from patients during a small outbreak of mild gastroenteritis; the disease was self-limited and of short duration. The organisms that appear to have been the etiologic agents possess characteristics that at present classify them as paracolon bacilli; until a more systematic scheme of classification is evolved these cultures are designated as paracolon (Pc.) 100-5-13. Clinical, epidemiological, biochemical and serological features are described briefly.

ACKNOWLEDGMENTS—The authors desire to express their indebtedness to the following: Lieutenant Commander F. S. Cheever, (MC), USNR., under whose direction the staff of the Department of Epidemiology carried out the epidemiological and statistical investigations; Lieutenant Commander Paul V. Woolley, Jr., (MC), USNR., Department of Bacteriology who supervised the testing of certain strains for susceptibility to Sufathiazole; and, Dr. P. R. Edwards for reading the manuscript.

REFERENCES

1. Topley, W. W. C., and Wilson, G. S. *The Principles of Bacteriology and Immunity.* 2nd ed. Baltimore: Wood, 1938.

2. Stuart, C. A., and Rustigian, R. Further Studies on One Type of Paracolon Organism. *A.J.P.H.*, 33: 1323–1325, 1943.

3. Edwards, P. R., Cherry, W. B., and Bruner, D. W. Further Studies on Coliform Bacteria Serologically Related to the Genus Salmonella. *J. Infect. Dis.*, 73:229–238, 1943.

4. Stuart, C. A., and Van Stratum, E. Antigenic Relationships of Coliform and Related Bacteria Isolated from Infants in the Nurseries of Two Institutions. *J. Pediat.*, 26:464–469, 1945.

5. Kauffmann, F. *Die Bakteriologie der Salmonella-Gruppe.* Copenhagen: Einar Munsgaard, 1941.

6. Edwards, P. R., and Bruner, D. W. Serological Identification of Salmonella Cultures. (Station) *Circ. 54, Ky. Agric. Exper. Sta.*, Lexington, 1942.

Implication of Proteus mirabilis in an Outbreak of Gastroenteritis*†

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ALTHOUGH there are various reports of outbreaks of gastroenteritis in which species of *Proteus* were at least circumstantially involved,[1, 2] with certain exceptions[3] there appears to be a reluctance on the part of investigators to make positive commitments in the question. In a previous publication[4] the junior author called attention to the probable implication of members of the genus *Proteus* in diarrheal diseases in man and the importance of collecting further evidence of etiologic relationships. The purpose of the present communication is to describe a small outbreak during which the predominating organism recovered was *Proteus mirabilis*.

FEATURES OF THE EPIDEMIC ‡

During the afternoon of December 26, 1944, a number of naval personnel became violently ill with gastroenteritis; all had eaten the noon meal at the mess hall in one of the barracks. Sliced baked ham was suspected as the vehicle of dissemination of the etiologic agent, since it was the article eaten by all the patients; it was placed on the menu toward the end of the mess period after the original entree was exhausted, with the result that only 50 to 75 portions were served. The ham in question was of the ordinary whole smoked variety and had been baked on December 25 for use on that date. All hams were boned before baking; after this they were placed in galvanized pans to cool prior to slicing. After slicing, the meat was stored in a refrigerator in stainless steel pans until serving on the 25th; sliced ham not needed at this meal was kept in the refrigerator until it was required for use at the noon meal on the 26th. Fortunately, samples of the meat served at the suspected meal were still available for culturing when investigation of the outbreak was begun.

The onset of symptoms averaged 3 hours after ingestion of the suspected food. A total of 29 patients reported to the barracks dispensary and 19 of them were hospitalized; 17 of these were stretcher admissions but the other 2 were ambulatory. As soon as possible after reaching the hospital all patients were questioned individually concerning their symptoms, and specimens for culturing were obtained from 15 of them. All patients had severe nausea and vomiting. Nearly all of them gave a history of almost continual emesis in the acute stage which eventually resulted in bile-tinged ejecta followed by watery fluid; blood was found in 2 specimens

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† The opinions or assertions contained herein are the private ones of the writers and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

‡ Taken in part from a report by Lieutenant H. F. Kruesburg (MC), USNR.

of vomitus. The numbers exhibiting other signs and symptoms were: (a) diarrhea, 18 of 19. The average number of stools per case in 9 patients was 8.9; 3 passed blood and 2 mucus; (b) abdominal cramps, 16 of 19; (c) fever, 3 of 19 with a maximum of 101° F., the other 16 had either normal or subnormal temperatures, the lowest at admission being 92° F.; (d) evidence of peripheral collapse, 6 of 17 recorded. It was necessary to administer intravenous fluid in 11 of 18 cases recorded. Although the disease was severe, it was of short duration; the average length of illness for 18 patients was 40 hours.

BACTERIOLOGIC STUDIES

As mentioned above, a specimen of the ham involved was secured. Specimens were taken from 15 patients as follows: stool and rectal swab, 2; rectal swab and vomitus, 2; rectal swab only, 7; vomitus only, 4. Since it was ascertained that certain food handlers in the serving line during the suspected meal were suffering from concurrent upper respiratory infections, nasopharyngeal cultures were taken from 5 of these individuals; these were not obtained, however, until the 3rd day following the outbreak.

In view of the clinical and epidemiological aspects of the outbreak and previous experiences the laboratory procedures used recognized the possibility that one of two broad groups of bacterial species might have been the etiologic agent: (a) hemolytic, toxigenic strains of staphylococci or streptococci; or, (b) one of the groups of Gram-negative enteric bacilli, particularly of the genus *Proteus*. Cultural methods employed were as follows:

A. *Ham*—Five grams selected to represent both the outer fatty and inner lean portions were triturated under sterile conditions with sand in a mortar until a smooth mixture was obtained. From the resulting suspension, 1.0 ml. amounts of various dilutions were cultured in blood agar pour plates to represent in terms of the original ham 0.125, 0.005, 0.0005, and 0.00005 gm. respectively; in addition, a loopful each of undiluted suspension was streaked directly onto a blood agar plate and a plate of S S agar. To the remainder of the ham was added sterile tryptose phosphate broth from which, after suitable incubation, S S agar plates were streaked.

After 48 hours' incubation at 37° C., *total* bacterial counts were made from the blood agar plates. The average number of bacteria per gm. of original ham as calculated from the 3 highest dilutions was between 60,000 and 62,000; the counts at each dilution were satisfactorily consistent. Upon macroscopic study of the colonies and microscopic examination of a representative number it was found, however, that less than 20 per cent of the total growth was hemolytic and morphologically characteristic of *Staphylococcus aureus*, thus yielding an estimated count of fewer than 12,000 staphylococci per gm. of meat; growth of streptococci was completely insignificant. These findings were, therefore, markedly discrepant from the "hundreds of millions" of these organisms usually found in foods causing staphylococcal food poisoning.[5]

Essentially a pure culture of Gram-negative bacilli in large numbers was obtained on the S S agar plates streaked from the ham-tryptose-phosphate broth culture.

B. *Vomitus*—The 6 specimens were each streaked onto blood agar plates and onto S S agar plates. Following suitable incubation and subsequent study no evidence of an etiologic relationship was found concerning a minimum number of what appeared to be beta-hemolytic streptococcal colonies that grew on the blood agar plates inoculated from 3 specimens.

From 3 of the 6 specimens streaked onto S S agar were obtained heavy growths of colonies of Gram-negative bacilli that were similar to those found in the ham-broth culture.

C. *Fecal Material*—Seven of 11 rectal swab specimens that were cultured on S S agar yielded large numbers of colonies of Gram-negative bacilli similar to those found in the ham-broth culture; there were very few colonies of other organisms. A stool specimen obtained from a patient from whom a rectal swab specimen was positive also yielded typical colonies on S S agar.

D. *Throat Cultures* — Nasopharyngeal, and in 1 case also peri-tonsillar, swab specimens were taken from 5 food handlers; these were cultured on blood agar plates in the usual manner. No growth of pigmented, hemolytic or otherwise significant colonies was obtained from 4 subjects. From both specimens taken from the other individual cultures of what appeared to be beta-hemolytic streptococcal colonies were obtained; further study, however, failed to reveal any etiologic relationship.

In all, 12 representative cultures of the Gram-negative bacillus obtained in predominance were selected for further study. The sources of these strains were as follows: ham, 1; rectal swab, 7; stool, 1; vomitus, 3. Only 9 patients are represented since in one instance both a stool and swab specimen were positive and in another the organism was recovered from both swab and vomitus specimens.

Biochemically, the 12 cultures were identical and were typically *Proteus mirabilis*. They produced acid and gas within 24 hours in glucose, xylose, and trehalose; acid and gas formation in sucrose was delayed for 2 to 4 days. The cultures actively hydrolyzed urea and produced large amounts of hydrogen sulfide within 24 hours; they were motile, they liquefied gelatin within 2 days and reduced trimethylamine oxide. The strains failed to ferment lactose, mannitol, maltose, rhamnose, dulcitol, arabinose, inositol, salicin, sorbitol, or adonitol during 14 days' incubation; all failed to utilize Koser's citrate and none produced indol.

SEROLOGIC STUDIES

Two of the strains were selected for immunizing rabbits; 1 (No. 527) was the culture isolated from ham and the other (No. 498) was from the stool specimen of a patient. Formalinized broth cultures of the organisms were too toxic to rabbits for immunization purposes. Antigens for inoculations were made by suspending the 18–24 hour growth on agar in physiologic saline containing 0.3–0.4 per cent formalin; previous passage of the cultures through semisolid agar[6] insured a maximum of flagellar elements. The initial dosage was 0.2 ml. of the suspension diluted to contain approximately 1 billion organisms per ml.; 5 subsequent injections were given in amounts of 0.5, 1.0, 2.0, 2.0 and 2.0 ml., respectively. All inoculations were administered intravenously and the interval was either 4 or 5 days. The rabbits were bled from the heart on the 8th day after the last dose of vaccine.

Both sera were tested for O and H agglutinin titers against all 12 strains. The O and H antigens were prepared from smooth cultures by the methods employed for salmonellas.[6] The O titers were significantly strong for all strains with both sera through a dilution of 1:80, indicating that the somatic antigens were similar if not identical. Essentially equally strong H reactions were obtained with both sera when tested in dilutions of 1:5,000, 1:10,000, and 1:20,000 against the 12 strains thus suggesting that the H antigens were also closely related if not identical.

In order to test further the identity

of the somatic and flagellar antigens, adsorptions of the 2 sera were made as follows: (a) serum homologous for the ham strain (No. 527) adsorbed with a stool strain (No. 498) and another portion adsorbed with a strain isolated from vomitus (No. 512); (b) serum homologous for the stool strain (No. 498) adsorbed with the ham strain (No. 527) and a second portion adsorbed with the vomitus strain (No. 512). The results of these adsorptions and subsequent agglutination tests are shown in Table 1.

TABLE 1

Agglutination of Pr. mirabilis Strains

Serum	Serum Adsorbed by Culture No.	Ham — No. 527		Stool — No. 498		Vomitus — No. 512	
		"O"*	"H"**	"O"	"H"	"O"	"H"
Stool No. 498	Unadsorbed	+	+	+	+	+	+
	512	—	—	—	—	—	—
	527	—	—	—	—	—	—
Ham No. 527	Unadsorbed	+	+	+	+	+	+
	498	—	—	—	—	—	—
	512	—	—	—	—	—	—

* + = Significant agglutination in 1:80 dilution or higher; — = no agglutination in any dilution down to 1:2½.

** + = Significant agglutination in dilutions through 1:20,000; — = no agglutination in any dilution down to 1:100.

The other 9 strains were tested with the two sera, unadsorbed and adsorbed, as shown above, with identical results. The evidence indicates, therefore, that the strains isolated from patients were all serologically identical with the strain isolated from the ham.

DISCUSSION

The failure, by the usual methods, to implicate members of the staphylococcal or streptococcal species in the outbreak does not necessarily exclude these organisms as possible causative agents. The number of staphylococci found per gm. of meat appears to be more nearly consistent with normal bacterial counts than with the markedly excessive numbers found when these organisms have been etiologically incriminated in epidemics of enterointoxication. It is possible that higher staphylococcal counts might have been obtained if additional specimens of the ham had been cultured; under the same conditions, however, larger numbers or Gram-negative bacilli might also have been found. It is somewhat unfortunate that it was not possible to conduct tests for enterotoxigenicity; such tests are frequently omitted when the bacterial counts are as low as those reported in this paper. Although no tests were done for the detection of a poisonous chemical agent, the incubation period and, in part at least, the symptomatology are not consistent with such a diagnosis.

The demonstration of what appear to be identical strains of *Proteus mirabilis* in the suspected food and in vomitus and fecal specimens of 9 of the patients does not prove, but strongly suggests the etiologic relationship of this organism. The incubation period, symptoms, and convalescence are all consistent with this opinion in view of the report by English workers.[3] It was not possible to conduct tests for the enterotoxigenic properties of the strains isolated, but broth cultures have been uniformly fatal in small doses when administered intravenously to rabbits. The short incubation period also suggests that a bacterial toxic substance

played an important part in the symptomatology. The fact that the organisms were recovered in large numbers from the feces of several patients may well point to a transient but definite infection of the intestinal mucosa. In a series of observations to be reported later, some supportive evidence will be presented concerning the probable part played by members of the genus *Proteus* in sporadic and epidemic cases of gastroenteritis.

SUMMARY AND CONCLUSIONS

Strains of *Proteus mirabilis* that were apparently identical biochemically and serologically were isolated from suspected ham and from 9 of 19 patients who became violently ill with gastroenteritis after eating the food. Attempts to demonstrate a causal relationship of staphylococci or streptococci were unsuccessful. It is believed that the studies furnish strong circumstantial evidence of the probable etiologic relationship of *Proteus mirabilis*. Clinical, bacteriological, and serological observations are described briefly.

REFERENCES

1. Jordan, E. O., and Burrows, W. The Production of Enterotoxic Substance by Bacteria. *J. Infect. Dis.*, 57:121–128, 1935.

2. Klieman, I., Frank, S., and Abrahamson, A. E. Food Poisoning Outbreaks Involving Smoked Fish—Their Epidemiology and Control. *A.J.P.H.*, 32:151–158, 1942.

3. Cooper, K. E., Davies, J., and Wiseman, J. An Investigation of an Outbreak of Food Poisoning Associated with Organisms of the Proteus Group. *J. Path. & Bact.*, 52:91–98, 1941.

4. Barnes, L. A. Pathogenic Enteric Bacilli. I. Paracolon, Proteus and Pseudomonas Groups. *U. S. Nav. M. Bull.*, 43:707–716, 1944.

5. Dack, G. M. *Food Poisoning*. Univ. Chicago Press, Chicago, 1943.

6. Edwards, P. R., and Bruner, D. W. Serological Identification of Salmonella Cultures. (Station) *Circ. 54*, Kentucky Agric. Exper. Sta., Lexington, 1942.

Dental Care in UNRRA Camps

Lt. Col. George A. Nevitt, Chief Dental Consultant at UNRRA's London Headquarters, recently announced that dental care is now available for 1,300,000 displaced persons in camps in Germany, Austria, and the Middle East. The basic treatments, consisting of extractions, fillings, treatments of diseases of the mouth, and replacement of missing teeth, are given by displaced dentists in the camps. Their work is supervised by six UNRRA area dentists and the camp health experts.

UNRRA has provided 100 complete units of dentistry equipment in Greece; it has also provided six scholarships to Greek dentists for postgraduate work in the United States and Britain.

Public Support for Multiple County Health Departments

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DURING the past several years there has been an ever increasing tendency for adjacent counties to pool their efforts and resources in the protection of their peoples against public health hazards by the formation of multiple county health departments. Dr. F. W. Kratz has called attention to the fact that in 1935 there was a total of 561 full-time health departments in the United States.[1] Of these, 41 were local district (multiple county) health departments. In 1942 the total number of full-time health departments had increased to 975, while local district (multiple county) health departments had increased to 187. Thus, in 1935, local district (multiple county) health departments represented 7.3 per cent of the full-time health departments in the United States, while in 1942 this percentage had increased to 19.2 per cent. Admittedly, some of the increase in the number of multiple county health departments during this period may be attributed to the fact that adjacent counties having full-time single county health departments were forced to share a health officer because of the shortage of personnel due to the world conflict. However, the writer is of the opinion that in many instances this may have proved to be a wholesome situation, since in the past, all too frequently, health officers were found to be serving small populations. This often represented a waste of public health man power. The Subcommittee on Local Health Units of the American Public Health Association proposes that one health officer with adequate training and experience should serve a population of not less than 50,000 persons, even with assistance on a part-time basis from local medical practitioners for certain public health programs.[2]

In order that multiple county health departments may be established it is necessary either that legislation exist permitting or requiring this procedure, or that at least there be no statutory contraindication to this arrangement. In Illinois we are fortunate in this respect. A statute commonly known as the Searcy-Clabaugh County Health Department Law was enacted in Illinois in 1943.[3] This legislation permits any county or two or more adjacent counties to establish and maintain a full-time health department. If four or more counties wish to establish a multiple county health department, it is necessary that permission for this combination be obtained from the State Department of Public Health. Of the 26 states listed by Emerson as having laws relative to county or multiple county health departments, 22 appear to provide for the organization of multiple county health departments.[4] It is noted that a considerable amount of the legislation relative to multiple county health departments was enacted only recently. This appears to indicate a wholesome trend.

The mere existence of legislation per-

mitting the establishment of multiple county health departments is, of course, only a first step. In order that multiple county health departments may be established, public interest and support are necessary. It is also realized that it is more difficult to arouse simultaneous interest and support in two or more counties in a proposal for the establishment of a multiple county health department than is the case when only one county is involved. In order that this necessary interest and support may be aroused and maintained, a number of factors must be considered in selecting counties for consolidation.

It would appear desirable that the public health problems of the counties involved be similar in character. This enables the attention of the populations involved to be focused upon similar public health situations. It is also considered important that the folkways and mores of the people of the counties involved be the same. In general, the habits and customs of peoples in contiguous counties are the same. There are, however, exceptions, and when such situations come to light, a rearrangement of plans for consolidation may frequently avoid difficulty. It is also believed that the consolidation of counties which are rather similar in regard to per capita wealth and population is desirable. When an attempt is made to promote the consolidation of a rich and a poor county, or a populous and a sparsely populated county, the people of the rich or populous county are often fearful that they will have to assume the burden of "a poor relative." On the other hand, the people of the poor or sparsely populated county are fearful that the lion's share of services of the health department will be received by the rich or populous county. Truly enough, this situation can be overcome by careful explanation and the institution of certain safeguards, but can often be avoided entirely by carefully choosing the counties for a proposed multiple county health department.

One usually finds also that a county which is essentially industrial does not consolidate smoothly with a county which is chiefly agricultural in nature. The public health problems of counties of these types usually differ rather markedly, and the people of the latter county tend to be more conservative than those of the former. A factor which is of a very practical nature, and one which may at first be overlooked, is that of travel facilities between the two counties, and especially between the two county seats. This is a situation which is immediately recognized by local groups but is all too frequently neglected by public health administrators who attempt to lay plans for the consolidation of health services from their offices in the state health department.

Much of the foregoing may appear irrelevant to the subject of public support for multiple county health Departments. However, I believe that many public health administrators who have had practical experience with these problems will recognize the validity of these statements.

To come to the subject for discussion, the person or persons who are seeking public support for a proposed multiple county health department will recognize that this support must come from several sources. The proposal must have the support of the governing bodies of the counties involved, since in many cases they will be relinquishing certain powers and duties, and these groups are made up of the persons who will make possible an appropriation for the financial support of the health department.

It should also be pointed out that, although powers and duties are often lost by individuals at the time of the establishment of a multiple county health department, the governing bodies

of the individual counties frequently acquire additional strengths at this time. For example, in Illinois the establishment of a multiple county health department results in the automatic abolition of all Township Boards of Health, thus decreasing the powers and duties of the individual supervisors of townships. However, the County Boards of Supervisors are enabled, after the establishment of a full-time health department, to adopt rules and regulations relating to public health matters, a power which they lacked prior to the establishment of the full-time health department.

The interest and support of professional groups will need to be aroused, since the attitude of the members of the local medical and dental professions will carry much weight with the county officials and the public. The active coöperation of these organized groups is also necessary for the successful operation of the health department after establishment. Of course, the interest and support of the citizens of the counties involved must be obtained. The attitude of the public will exert much influence on the governing bodies of the county and, in some instances, as will usually be the case in Illinois, a favorable vote by the electorate in a referendum is necessary in order that a multiple county health department may be established.

The immediate reaction of the members of the governing bodies of counties for which consolidation is proposed will usually depend upon their experience in the past with the officials of the county or counties with which combination is suggested. If this relationship has been a pleasant one, the proposal is apt to be favorably received from the outset. On the other hand, if the relationship has been unpleasant, a great deal of careful explanation of the provision safeguarding the interests of the individual counties will be necessary. These explanations, supported by manifest public approval, will often prove effective in obtaining the support of the county officials to the extent of securing the appointment of a group of individuals from each governing body to serve on a joint committee to give further consideration to the proposal. Meetings of such a committee make possible a thorough discussion of the proposition and joint consideration of the interests and problems involved. These meetings also make it possible for the officials of the counties to develop acquaintanceships which will be helpful in maintaining the support of the governing bodies for the health department after establishment.

Fortunate is the public health administrator who finds that the professional societies of the counties suggested for consolidation either exist as a joint county society or have frequent joint meetings. If such is the case the development of the support of these groups is usually greatly facilitated. At any rate, it is desirable that in this instance also joint committees be appointed from the professional societies to give consideration to the proposal and discuss the principles involved. Out of such committee meetings will usually come the support and coöperation desired.

In Illinois we are very fortunate in having as an effective tool for the development of public interest and support for local health services a Statewide Public Health Committee. This committee was formed in 1942 because of a recommendation growing out of a survey of the Illinois Department of Public Health by the Committee on Administrative Practice of the American Public Health Association.[5] The Statewide Public Health Committee consists of influential persons throughout Illinois having a known interest in public health matters. It was established for the purpose of arousing public interest in a statute permitting coun-

ties to establish and maintain full-time local health departments, and after or coincident with the enactment of this legislation to develop public interest in each county in good local health services. The legislation mentioned above having been obtained in 1943, the Statewide Public Health Committee is now devoting the major portion of its efforts toward the implementation of the plan which has been developed by the Illinois Department of Public Health for the complete coverage of the state with county and multiple county health departments.[6]

County components of the Statewide Public Health Committee have been organized in a number of Illinois counties. When interest is found in the development of a multiple county health department, the county components of the Statewide Public Health Committee, if existing already, are swung into action. If such committees do not exist there will usually be found in each of the counties members of the Statewide Public Health Committee who can be used as nuclei for the organization of such committees. From these groups a joint committee is appointed to discuss the suggestion for the development of a multiple county health department and study the local health problems of the area. After issues have been clarified through this study, various existing organizations in each county are approached and acquainted with the proposal and their active coöperation and support are solicited. By this means a substantial cross-section of the opinion of both counties is reached and a favorable attitude toward the proposal is engendered.

The discussion heretofore has related principally to the development of cooperation and support of various organizations and groups to the end that a multiple county health department be established. A continuation of this public support after establishment is, of course, necessary if the health department is to operate successfully. In order to assure the continuation of this interest, the joint committee set up prior to the establishment of the health department should be perpetuated. The joint committee of the governing bodies of the counties will find it necessary from time to time to discuss the responsibilities of each body in regard to the financing of the health department. These and other problems will act as stimuli to keep the interest of this group alive. The joint committees of the professional groups could logically grow into advisory committees to the health department. It is also usually considered desirable procedure to permit the professional groups to make nominations for the appointment of the professional members of the multiple county Board of Health which, under the County Health Law in Illinois, consists of three persons from each county, one from each county being a physician and one member of the multiple county Board of Health being a dentist. Responsibilities of this type which fall upon the professional groups will aid in maintaining their interest. The joint committee of the County Public Health Committees could in similar manner become the lay advisory committee to the health department. This committee can serve to protect the health department by vigorously supporting the appointment of a multiple county Board of Health composed of competent and interested persons, by promoting the appointment of a well trained staff for the health department, and supporting the health officer in obtaining an adequate budget for the department. Similarly, the county public health committees from which the joint committee was appointed should continue to function, since they will need to support the lay advisory committee in its endeavors and, having studied the public health situations of their respec-

tive counties, can interpret to the health officer local public health problems which are in need of solution.

In conclusion, public support of multiple county health departments depends upon the following factors:

1. Adequate legislation.
2. Care in the selection of counties for consolidation
3. Interest and coöperation of governing bodies
4. Interest and coöperation of professional groups
5. Strong lay public health committees
6. A populace which has been made conscious of their public health problems

REFERENCES

1. Kratz, F. W. Status of Full-Time Local Health Organization at the End of the Fiscal Year 1941–42. *Pub. Health Rep.*, 58:9 (Feb. 26), 1943.
2. Emerson, Haven. *Local Health Units for the Nation*, Chap. 1, p. 2. The Commonwealth Fund, 1945.
3. *Illinois Revised Statutes 1943*, Chap. 111½, Sec. 20c.
4. Emerson, Haven. *Local Health Units for the Nation*, Chap. 5, p. 332. The Commonwealth Fund, 1945.
5. Buck, Carl E. *Public Health in Illinois*. Pages 24–25, Committee on Administrative Practice, American Public Health Association, 1942.
6. Emerson, Haven. *Local Health Units for the Nation*, Chap. 4, p. 83–92. The Commonwealth Fund, 1945.

State Geriatrics Institute Planned for May

A one-day geriatrics institute sponsored by the Indiana University School of Medicine and the Indiana State Board of Health will be held in the auditorium of the Indiana University School of Medicine May 22. The purpose of the institute is to study the process of aging, the problems of the aged, and the more common diseases and disabilities associated with aging. In attendance will be physicians interested in geriatrics, educators, dentists, nurses, social workers, representatives of industry and labor and, in fact, all who may have an interest in the medical, social, and economic problems connected with the rapidly increasing age of our population.

The forenoon session of the institute will be devoted to a discussion of Health Guidance in Maturity, Mental Hygiene and Geriatrics, with a symposium on diseases of advancing years including cardiovascularrenal diseases, arthritis, cancer, eye and ear diseases, and hormone therapy. Dr. W. D. Gatch, Dean of Indiana University School of Medicine, will preside at the forenoon session.

Dr. L. E. Burney, State Health Commissioner, will preside at the afternoon session. The program will be devoted to an address on geriatric medicine by Dr. E. J. Stieglitz, Washington, D. C., Consultant in Gerontology to the National Institute of Health, and author of a book on geriatric medicine. As a further part of the afternoon program the subject, Aging as an Industrial Health Problem, will be discussed by a representative of labor, a representative of management and an industrial physician.

A public meeting in the evening to be addressed by a speaker of national reputation and experience is planned as a conclusion to the institute. All the facilities of the Indiana University School of Medicine and of the State Board of Health will be devoted to making this institute a success and in creating a widespread interest, both professional and public, in the purpose of the institute.

The program will begin at 9 A.M., continue throughout the day, and close with the evening meeting for the general public.

Tularemia

A Report on 40 Cases in Alberta, Canada, 1931–1944

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TULAREMIA was first recorded in Alberta in 1932 when Shaw and Jamieson [5] reported a case that occurred at Tofield in 1931. The next record was by Wright [6] in 1935 when he reported two cases in the Athabasca district. In 1939 Brown [3] reported a tick-transmitted case, and in 1943 Bow and Brown [2] reported two cases at Whitla. In 1945 Bell [1] reported a case contracted by a packing-plant employee.

INVESTIGATIONS

On account of the fact that tularemia simulates so many other diseases it is difficult to diagnose clinically. In Alberta prior to 1934 blood tests were carried out only on those cases which

TABLE 1

Accepted Cases by Years

Year	*Month*	*Name*	*Sex*	*Age*	*Location*	*Agglutination Titer*	*Contact*	*Result*
1931	October	P.B.	M	53	Tofield	1– 5,000	Rabbits	Recovered
1934	July	W.I.	M	55	Berrymore	1– 800	"	"
	August	O.S.	M	48	Wabamun	1– 800	"	"
	September	Mrs. W.S.	F	44	Prosperity	1– 200	"	"
	October	F.W.	M	16	Perryvale	1– 1,600	"	"
	October	H.F.	M	31	Jasper	1– 1,600	Cat bite	"
	October	R.B.	M	22	Gainford	1– 320	Rabbits	"
	November	Mrs. J.P.	F	32	Edmonton	1– 800	Grouse	"
	November	Mrs. B.	F	60	Edmonton	1– 800	Rabbits	"
1935	June	Mrs. P.	F	40	Winterburn	1– 1,600	"	"
1936	July	H.D.	M	16	St. Paul	1– 1,600	Ground squirrels	"
	December	D.H.	M	?	Taber	1– 1,600	Not known	"
1939	May	T.M.	M	30	Walsh	1– 400	Tick bite	"
1940	May	Mrs. M.L.	F	?	Grimshaw	1– 6,400	Rabbits	"
	June	Mrs. W.M.	F	30	Whitla	1– 1,600	Tick bite	"
	June	L.Y.	M	?	Winterburn	1– 6,400	Rabbits	Died
	July	Miss F.L'H.	F	?	Grimshaw	1– 3,200	Not known	Recovered
	July	F.R.	M	?	Grimshaw	1– 6,400	Rabbit bite	"
	October	Miss N.S.	F	16	Vegreville	1– 3,200	Rabbits	"
1941	July	Mrs. H. LaR.	F	34	Prairie Echo	1– 400	"	"
	August	W.B.	M	?	Notikiwin	1– 800	"	"
	August	Miss L.	F	17	Prairie Echo	1– 1,600	"	"
	September	J.G.	M	?	Macleod	1–12,800	"	"
	November	T.S.	M	62	Pibroch	1–51,600	Not known	"
1942	April	M.L.	M	49	Whitla	1– 400	Tick & sheep	"
	June	E.A.	M	58	Grimshaw	1– 3,200	Rabbits	"
	August	H.M.	M	?	Radway	1– 6,400	Ground squirrels	"
	August	N.P.	M	14	Plamondon	1– 400	Rabbits	"
	September	J.W.	M	59	Anton Lake	1–12,800	Not known	Died
	October	E.B.	M	11	Ft. Assiniboine	1– 400	Rabbits	Recovered
1943	May	M.K.	M	36	Edmonton	1– 1,600	Swine	"
	June	G.O.	M	40	Cold Lake	1– 800	Mink & cat bites	Died
1944	February	G.H.	M	51	Barrhead	1– 200	Skunk	Recovered
	June	F.S.	M	14	Lake Isle	1– 3,200	Rabbits	Died
	June	Mrs. A.D.	F	?	Nakamun	1– 400	"	Recovered

the attending physician suspected as being tularemia. However, in that year the Provincial Laboratory began to include *Pasteurella tularensis* as an antigen in routine agglutination tests for typhoid and related organisms. By this means a small number of cases of tularemia were found that might otherwise have been missed.

Some of the blood sera examined agglutinated *P. tularensis* to a low titer only and, as the patients concerned did not present clinical evidence of tularemia, it was considered that the positive reaction might have been due to an old infection or some other cause. Such deduction follows the theorizing of Francis and other eminent workers in the field of tularemia. However, these routine tests proved of great assistance in the diagnosis of some obscure cases.

The following report is based on material collected from physicians and hospitals, and supplemented by laboratory findings. The cases are divided into groups: Group I: Accepted Cases; Group II: Probable Cases.

GROUP I

Accepted Cases

Cases were accepted as proven when there were a clinical picture of tularemia; a history of exposure to a source known to be capable of transmitting tularemia; and satisfactory laboratory findings.

Since 1931 a total of 35 such cases, of which 4 were fatal, have occurred. They are recorded in Table 1.

Table 1 contains considerable information that is worthy of examination. Therefore, the table will be broken down for a detailed analysis of its various parts.

In 1934, which marked the inception of the routine laboratory tests, 8 cases were located. From then until 1940 only 4 cases were reported. In 1940 6 cases, in 1941 5 cases, in 1942 6 cases, in 1943 2 cases, and 1944 3 cases, were recorded. There is no indication in

TABLE 2

Number of Cases per Year

Year	*Cases*
1931	1
1934	8
1935	1
1936	2
1939	1
1940	6
1941	5
1942	6
1943	2
1944	3

TABLE 3

Monthly Cases with Contacts

Contact	*January*	*February*	*March*	*April*	*May*	*June*	*July*	*August*	*September*	*October*	*November*	*December*	*Total*
Rabbits	..	..	..	..	1	5	3	4	2	5	1	..	21
Ground squirrels	..	..	..	..	..	..	1	1	..	..	..	..	2
Cats	..	..	..	..	..	1 [1]	..	..	..	1	..	..	2
Ticks	..	..	..	1 [2]	2	..	..	..	..	..	..	..	3
Grouse	..	..	..	..	..	..	..	..	..	..	1	..	1
Mink	..	..	..	..	..	1 [1]	..	..	..	..	..	..	1
Sheep	..	..	..	1 [2]	..	..	..	..	..	..	..	..	1
Swine	..	..	..	..	1	..	..	..	..	..	..	..	1
Skunk	..	1	..	..	..	..	..	..	..	..	..	..	1
Unknown	..	..	..	..	..	..	1	..	1	..	1	1	4
Totals	..	1	..	2	4	7	5	5	3	6	3	1	37

[1] Both cat and mink involved as probable source in the one case.

[2] Both ticks and sheep involved as a source of infection as the patient had been skinning sheep dead from tularaemia, and had also been bitten by infected ticks (Gwatkin, et al.[4]).

Table 2 that human tularemia in Alberta follows a cyclic pattern.

It is interesting to note that of the 35 cases, 26 occurred during the period June to October, inclusive. As tularemia is a disease that is mainly contracted through contact, such a distribution indicates that epidemiological studies might be productive of information of value.

The fact that only 21 of the cases were traced to contact with rabbits indicates that, although rabbits are the main source of infection, the sources, and potential sources, of tularemia are many and varied. There is a definite seasonal relationship of cases due to contact with rabbits, with all of the cases occurring during the period May to November, inclusive.

As the spotted fever tick is only active during the spring and early summer, seasonal human cases due to it are easily explained.

Tularemia infection in ground squirrels has been reported from three widely separated areas in Alberta. As these animals are active only during the warm seasons, it is natural to expect that they would be recorded as a source of human infection during the summer.

A SUMMARIZATION BY YEARS OF ACCEPTED CASES

1931

1. P.B., male, age 53; Tofield
   Hospitalized—Nov. 6 to Nov. 23
   Agglutination titer—1–5,000
   Contact—Handling rabbits
   Result—Recovered
   Remarks—Pleural fluid inoculated into guinea pig produced *P. tularensis* infection. Organism isolated in pure culture from infected guinea pigs. (Reported: Shaw & Jamieson [5])

1934

1. W.I., male; age 55; Berrymore
   Hospitalized—July 7 to Aug. 20
   Agglutination titer—1–800, Aug. 7, 1934
   1–100, Dec. 3, 1934
   Contact—Skinning rabbits
   Result—Recovered
   Remarks—Infection through finger prick. Painful left axilla and general body pains
2. Mrs. W.S., age 44; Prosperity
   Hospitalized—Aug. 15, 1934
   Agglutination titer—1–200, Aug. 20
   Contact—Skinning rabbits on Sept. 30, 1933 to feed dogs
   Result—Recovered
   Remarks—(Reported by Wright [6])
3. O.S., male, age 48; Wabamum
   Hospitalized—Oct. 7 to Oct. 20
   Agglutination titer—1–800, Aug. 22, 1934
   Contact—Skinning rabbits
   Result—Recovered
   Remarks—Scratch on left hand "festered." Soreness and palpable gland in axilla
4. R.B., male, age 22; Gainford
   Hospitalized—Oct. 19 to Dec. 31
   Agglutination titer—1–320, Feb. 22, 1935
   Contact—Handling rabbits
   Result—Recovered
   Remarks—"He felt well as usual until May, 1934, when he developed what was considered bronchial pneumonia. He was sick for two weeks, lost 51 lbs., had a high fever, and was, I believe, x-rayed at that time. He felt well from the middle of August till September, when he developed severe chill and pain in the region of the bladder and had difficulty in micturition. Temperature 99 to 101° for two weeks, with some night sweats. About October 1, 1934, he developed a cough.

   On discharge from the Sanatorium, December 31, 1934, it was considered that this patient had a nontuberculous pneumonia involving the right upper chest and that he had almost completely recovered.

   Subsequent to his discharge from the Sanatorium, it came to the attention of the attending physician that this young man had been handling rabbits to some extent. A specimen of blood submitted to the Provincial Laboratory, gave the usual findings for tularemia"
5. Mrs. J.P., age 32; Edmonton
   Hospitalized—Nov. 2 to Nov. 28
   Agglutination titer—1–800, Nov. 6, 1934
   Contact—Cleaning grouse
   Result—Recovered
   Remarks—Infection of finger followed by enlarged axillary glands
6. F.W., male age 16; Perryvale
   Hospitalized—Nov. 26 to Nov. 30
   Agglutination titer—1–1,600, Dec. 3, 1934
   Contact—Skinning rabbits
   Result—Recovered

Remarks—Pus under fingernail of right hand, and a small lump in right axillary space. (Reported by Wright [6])

7. Mrs. B., female, age 60; Edmonton
Hospitalized—(no)
Agglutination titer—1–800, Dec. 5, 1934
Contact—Skinning rabbits
Result—Recovered

Remarks—She received a scratch from a bone sliver while dressing a rabbit. Lymphangitis resulted, followed by pneumonia

8. H.F., male, age 31; Jasper
Hospitalized—Oct. 12 to Nov. 5
Contact—Bite of cat
Result—Recovered
Remarks—Bite on thumb
Re-hospitalized—Dec. 3, 1934 to Jan. 3, 1935
Agglutination titer—1–1,600, Dec. 7, 1934
Result—Recovered

Remarks—Swelling appeared in axilla Nov. 15 and was very painful, also painful swelling on arm

1935

1. Mrs. P., female, age 40; Winterburn
Not hospitalized
Agglutination titer—1–1,600, June 22, 1935
Contact—Rabbits
Result—Recovered

Remarks—Infection in hand and arm

1936

1. H.D., male, age 16; St. Paul
Hospitalized—July 19 to Aug. 3
Agglutination titer—1–1,600, Aug. 11, 1936
Contact—Ground squirrels
Result—Recovered

Remarks—Infection through cut on left hand while skinning ground squirrels

2. D.H., male, age unknown; Taber
Not hospitalized
Agglutination titer—1–1,600, Dec. 9
Contact—Not known
Result—Recovered

Remarks—Glandular tularemia involving the axillary and mediastinal glands

1939

1. T.M., male, age 30; Walsh
Hospitalized—May 11 to July 2
Agglutination titer—1–100—May 25
1–400—June 1
1–200—June 22
1–200—June 29
1–100—Aug. 4
1–100—Sept. 18
Contact—Tick bite
Result—Recovered

Remarks– Tick bites on scrotum and chest. Clinical diagnosis—typhoidal tularemia

1940

1. Mrs. M.L., female, age unknown; Grimshaw
Hospitalized—May 21 to June 7
Agglutination titer—1–6,400, June 1, 1940
Contact—Rabbits
Result—Recovered

Remarks—Cut hand while skinning rabbits

2. Mrs. W.M., female, age 30; Seven Person's Coulee (Whitla)
Hospitalized—June 7 to July 23
Agglutination titer—1– 200—June 19
1–1,600—June 22
1–1,600—June 24
1– 800—Sept. 3
1– 400—Nov. 7
Contact—Tick bite
Result—Recovered

Remarks—Tick bite on inner part of left leg
Clinical diagnosis—Typhoidal tularemia

3. L.Y., male, age unknown; Winterburn
Hospitalized—June
Agglutination titer—1– 200—June 18
1–1,600—June 20
1–6,400—June 24
Contact—Rabbits
Result—Died

Remarks—Organism isolated from ulcer, June 25, by guinea pig inoculation

4. F.R., male, age unknown; Grimshaw
Not hospitalized
Agglutination titer—1–6,400, July 17, 1940
Contact—Rabbits
Result—Recovered

Remarks—Bitten on hand by rabbit

5. Miss F. L'H., female, age unknown; Grimshaw
Hospitalized—July 31 to Aug. 16
Agglutination titer—1–3,200, Sept. 21, 1940
Contact—No known contact with rabbits. Possibility of having eaten chicken or some animal which might have ingested infected rabbits
Result—Recovered

Remarks—No known contact with rabbits. Very sore throat and massive glands in neck.

6. Miss N.S., female, age unknown; Vegreville
Hospitalized—Oct. 10 to Nov. 15
Agglutination titer—1–3,200, Oct. 26, 1940
Contact—Rabbits
Result—Recovered

1941

1. Mrs. H.LaR., female, age 34; Prairie Echo
   Hospitalized—July 8 to Aug. 4
   Agglutination titer—1–400, July 10, 1941
   Contact—Rabbits
   Result—Recovered
   Remarks—General malaise, fever, headache and symptoms of basal pleurisy—right base

2. Miss L., female, age 17; Prairie Echo
   Hospitalized—Aug. 3 to Aug. 30
   Agglutination titer—1–1,600, Aug. 5, 1941
   Contact—Rabbit
   Result—Recovered
   Remarks—General malaise, headache, and pyrexia

3. W.B., male, age unknown; Notikiwin
   Hospitalized—Aug. 6 to Oct. 17
   Agglutination titer—1–800, Aug. 13, 1941
   Contact—Rabbits
   Result—Recovered.
   Remarks—Caught rabbits, skinned and fed them to pigs
   Re-hospitalized—Oct. 18 to Nov. 19
   Agglutination titer—1–400, Oct. 20, 1941
   Contact—Rabbits
   Result—Recovered
   Remarks—Sputum injected into guinea pig October 20, failed to infect

4. J.W.G., male, age unknown; Macleod
   Hospitalized—Sept. 10 to Dec. 20
   Agglutination titer—1–12,800, Sept. 29, 1941
   Contact—Rabbits
   Result—Recovered
   Remarks—Skinning rabbits to feed dogs

5. T.S., male, age 62; Pibroch
   Hospitalized—Nov. 22 to Dec. 17
   Agglutination titer—1– 800—Nov. 25
   1–51,600—Dec. 15
   Contact—Unknown
   Result—Recovered
   Remarks—Final diagnosis was pleurisy. Sputum injected into guinea pig Nov. 29 produced death of the pig with typical lesions of *Pasteurella tularensis*

1942

1. M.L., male, age 49; Whitla (Seven Person's Coulee)
   Hospitalized—April 30 to May 22
   Agglutination titer—1–400—May 26
   1–400—May 30
   Contacts—Tick bite and infected sheep
   Result—Recovered
   Remarks—Pleural fluid injected in guinea pig on Aug. 4 and *P. tularensis* isolated. This man suffered tick bites and also handled *P. tularensis* infected sheep

2. E.A., male, age 58; Grimshaw
   Hospitalized—June 15 to July 11
   Agglutination titer—negative—June 15
   1– 200—June 24
   1–3,200—July 4
   Contact—Rabbits
   Result—Recovered
   Remarks—Guinea pig inoculated with pleural fluid on July 4 developed typical lesions of *P. tularensis*

3. N.P., male, age 14; Lac la Biche
   Hospitalization—(no)
   Agglutination titer—negative—July 9
   Contact—Rabbits
   Result—Recovered
   Remarks—Abscesses in both axillae
   Re-hospitalized—Sept. 3 to Sept. 16
   Agglutination titer—1–400, Sept. 8, 1942
   Contact—Rabbits
   Result—Recovered
   Remarks—Handling rabbits

4. H.M., male, age unknown; Radway
   Hospitalized—Aug. 24 to Aug. 29
   Contact—Ground squirrels and rabbits
   Results—Recovered
   Remarks—Ulcer on toe and abscess on thigh, guinea pig inoculated Aug. 28, died Sept. 2, *P. tularensis* isolated
   Re-hospitalized—Sept. 7 to Sept. 11
   Agglutination titer—1–6,400, Sept. 8, 1942
   Contact—Ground squirrels and rabbits
   Result—Recovered
   Remarks—(same as above)

5. J.W., male, age 59; Anton Lake
   Hospitalized—Sept. 24 to Oct. 11
   Agglutination titer—1– 3,200—Oct. 3
   1–12,800—Oct. 7
   Contact—Unknown
   Result—Died, Oct. 11, 1942
   Remarks—M2878/42 Sputum collected on Oct. 8 inoculated into guinea pig Oct. 8, 1942, which showed typical lesions of *Past. tularensis*
   M2906/42 Citrated blood collected Oct. 9, 1942, and inoculated into guinea pig on Oct. 10, 1942; this guinea pig was killed when apparently ill on Oct. 15, 1942. No gross or microscopic lesions of tularemia were found. Material from the liver of this guinea pig was inoculated into a second guinea pig which died on Oct. 25 and showed typical lesions of tularemia in spleen, glands, and liver
   P.M./40/42 Autopsy Oct. 11, 1942. Speci-

mens from pleural fluid, spleen, spleen abscess, lung and abscess in axilla when inoculated on Oct. 14, 1942, into five guinea pigs respectively caused *Past. tularensis* infection. All showed typical lesions in 4 to 7 days. Material from liver failed to cause infection. Culture of *Past. tularensis* was obtained from guinea pig inoculated with pleural fluid. Cultures made from pleural fluid, spleen, spleen abscess, liver, abscess in axilla were all negative on blood agar and cystine agar. Culture from left lung; 1. Non-hemolytic streptococci. 2. Freidlander's bacillus. 3. *Staphylococcus pyogenes aureus*

6. E.B., male, age 11; Ft. Assiniboine
Hospitalized—Oct. 20 to Nov. 1
Agglutination titer—1–400, Dec. 1, 1942
Contact—Rabbits
Result—Recovered

Remarks—None

1943

1. M.K., male, age 36; Edmonton
Hospitalized—May 28 to July 10
Agglutination titer—negative—June 2
1–1,600—June 10, 1943
Contact—Scratch on finger from pig's tooth while working at packing plant
Result—Recovered

Remarks—Pleural fluid inoculated into guinea pig on June 15. Lesions in guinea pig typical of *Past. tularensis*. (Reported by Bell [1])

2. G.O., male, age 40; Cold Lake
Hospitalized—July 14 to July 24
Agglutination titer—Negative—July 7
1–100—July 12
1–800—July 14
Contact—Mink bite on little finger of left hand on June 22. Cat bite at same site on June 28.
Result—Died, July 24, 1943

Remarks—Thirty-six hours after the cat bite, patient became dizzy, ill and feverish. Guinea pig inoculated on July 28 with material collected at post-mortem from spleen. Lesion in the guinea pig typical of *Past. tularensis*

1944

1. G.H., male, age 51; Barrhead
Hospitalized 5 weeks, February-March
Agglutination titer—1–200—Mar. 22
1–100—Oct. 26
Contact—Cut finger while skinning a skunk
Result—Recovered

Remarks—Clinical diagnosis glandular type of tularemia. Lost 40 lbs. in 5 weeks in hospital.

Treatment—Drainage of lymph sulfathiazole

2. F.S., male, age 14; Lake Isle
Hospitalized—June 10 to Aug. 23
Agglutination titer—1– 100—June 17
1–1,600—June 22
1–3,200—July 12
Contact—Rabbits
Result—Died, August 23, 1944

Remarks—Primary lesion in conjunctival sac of right eye. On June 15, 1944, guinea pig M3701/44 inoculated with material from right eye. The pig died in 6 days and showed typical lesions of *Past. tularensis* in liver, spleen and lymph nodes.

M3810/44 . . . June 19, 1944. Cerebral spinal fluid yielded pure culture of *Past. tularensis*. Two guinea pigs inoculated on June 19 were killed on June 23 when very ill; both showed typical lesions of *Past. tularensis*, in spleen, liver and lymph nodes.

M4370/44 . . . July 19, 1944. Guinea pig inoculated with cerebral spinal fluid-negative.

P.M. 25/44 . . . August 23, 1944. Guinea pigs inoculated from autopsy material collected from pleura, heart blood, and brain were all healthy at the end of 10 days and were negative for *Past. tularensis* infection. The pig inoculated with material from the spleen died in 5 days with typical lesions of *Past. tularensis*. Cultures from lung tissue and pleura yielded hemolytic streptococci.

3. Mrs. A.D., female, age unknown; Nakamun
Hospitalized—June 22 to July 21
Agglutination titer—1–400, June 23, 1944
Contact—Rabbit through cut on finger
Result—Recovered

Remarks—Guinea pig inoculated June 24 with pus from axilla and thumb, killed when moribund June 28 and showed typical lesions of *Past. tularensis*

GROUP II

Probable Cases

Cases diagnosed as tularemia in which the agglutination tests were positive, but in which no adequate, detailed clinical history nor evidence of

TABLE 4

Probable Cases by Years

Year	Month	Name	Sex	Age	Location	Agglutination Titer	Contact	Result
1941	September	L.J.	M	?	Athabasca	1–3,200	Unknown	Recovered
	November	H.L.	M	44	Lac la Biche	1– 800	Unknown	Recovered
	November	D.F.	M	?	Berwyn	1–1,600	Unknown	Recovered
1942	September	R.V.	M	?	Grassland	1– 400	Unknown	Recovered
1944	May	G.L.	M	22	Mulhurst	1– 400	Unknown	Recovered

contact with a likely source of infection by *P. tularensis* are available.

Five cases in this category have been reported since 1941. These cases are listed in Table 5.

TABLE 5

Summary of Cases

1941

1. L.J., male, age unknown; Athabasca
   Not hospitalized
   Agglutination titer—1–3,200, Sept. 3
   Contact—Not known
   Result—Recovered
   Remarks—The blood serum of this patient also agglutinated *B. abortus* 1–3,200. The attending physician regarded this as a case of tularemia

2. H.L., male, age 44; Lac la Biche
   Hospitalized—Oct. 18 to Nov. 7
   Agglutination titer—1–800, Oct. 24
   Contact—Not known
   Result—Recovered
   Remarks—Had suppurative axillary adenitis on admission

3. D.F., male, age unknown; Berwyn
   Not hospitalized
   Agglutination titer—1–1,600, Nov. 22
   Contact—Not known
   Result—Recovered
   Remarks—Diagnosed as tularemia

1942

1. R.V., male, age unknown; Grassland
   Hospitalized—No
   Agglutination titer—1–400, Sept. 3
   Contact—Not known
   Result—Recovered
   Remarks—None

1944

1. G.L., male, age 22; Mulhurst
   Not hospitalized
   Agglutination titer—1–200, May 25
   1–400, May 28
   1–400, May 29
   1–400 June 7
   Contact—Handled muskrats but [illegible] history of bites
   Result—Recovered
   Remarks—No evidence of ulcer. Possible glandular type of tularemia with entrance of organisms through the skin.

ACKNOWLEDGMENTS—The authors wish to acknowledge the assistance received from Dr. R. M. Shaw, Provincial Bacteriologist and Professor of Bacteriology, University of Alberta. Dr. Shaw supplied the laboratory data, and gave much constructive criticism during the preparation of this paper. Acknowledgment is also made of the assistance received from physicians and hospitals, generally.

REFERENCES

1. Bell, I. R. A Case of Tularaemia of Unusual Origin. *Canad. M. A. J.*, 50, 6:555–556, 1945.
2. Bow, M. R., and Brown, J. H. Tularaemia in the "Seven Person's Coulee," Alberta. *Canad. Pub. Health J.*, Sept., 1943.
3. Brown, J. H. Tularaemia in Southern Alberta. *Canad. J. Med. Tech.*, 5, 2:55–57, 1943.
4. Gwatkin, R., Painter, R. H., and Moynihan, I. W. Tularaemia in Sheep. *Canad. J. Comp. Med.*, June, 1942.
5. Shaw, R. M., and Jamieson, H. C. Tularaemia, with Report of a Case. *Canad. M. A. J.*, 26, 3: 305–307, 1932.
6. Wright, E. K. Two Cases of Tularaemia. *Canad. M. A. J.*, 33, 3:309–310, 1935.

Wartime Changes in the Age Distribution of Females Infected with Syphilis

Their Effects on Epidemiologic Procedures and Program Planning

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SINCE 1940 there has been much speculation concerning possible changes in the age at which new infections of venereal disease occur. It has been the general impression that the teen age group is forming an increasing proportion of the problem. This point has been brought out on a number of occasions in addresses on social problems and police and welfare work,[1-4] usually based on conclusions drawn from personal experience without statistical analysis. Several more objective studies have been made[5, 6] in which such a trend toward the teen ages has been deduced from the fact that a lower median age of infection can be demonstrated in specific areas studied. Beyond these studies little statistical evidence has been presented to show either the occurrence or non-occurrence of a shift in the age at which infections occur.

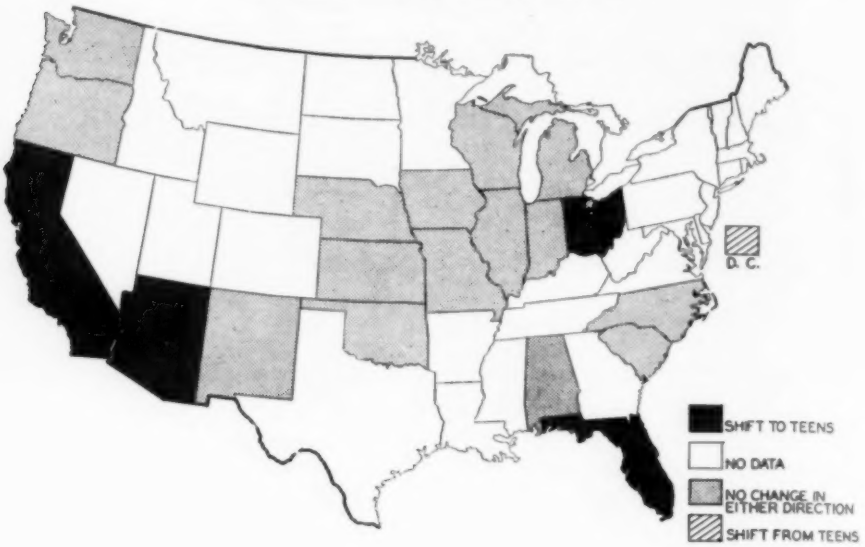
By means of the services of the regional and state tabulating units throughout the United States, it has been possible to obtain a large body of data tabulated by single years of age and by race and sex concerning patients admitted to public clinics for early syphilis. It is the purpose of the present study to analyze these data with respect to any changes which may have occurred in the age at which syphilis is acquired.

Data were available covering the years 1941 through 1944 for the following states: Ohio, Indiana, Illinois, Michigan, Wisconsin, Iowa, Missouri, Nebraska, Kansas, North Carolina, South Carolina, Florida, Alabama, Oklahoma, New Mexico, Arizona, Washington, Oregon, and California, and for the cities St. Louis, Chicago, New York, and the District of Columbia.

The analysis was limited to females since male admissions to public clinics have been directly affected to such a large extent by the changing Selective Service Regulations.

The usual method of analysis of age trends, namely the investigation of differences between median ages, was not used since a change in age distribution is reflected in the median only when such a change occurs between age years higher than and lower than the median. For instance, a shift from the early twenties in one year to the teens in the next year would not be reflected in the median if this average happened to fall in the middle twenties for both years. Instead it was decided the data should be considered as a whole, and the per cent which the admissions at

CHART 1—Changes in Age Distribution of White Females Infected with Syphilis Admitted to Public Clinics, 1941–1942



each year of age was of the total admissions was compared from one year to the next. Chi square tests were calculated for the paired individual years of age to test the significance of the observed changes.*

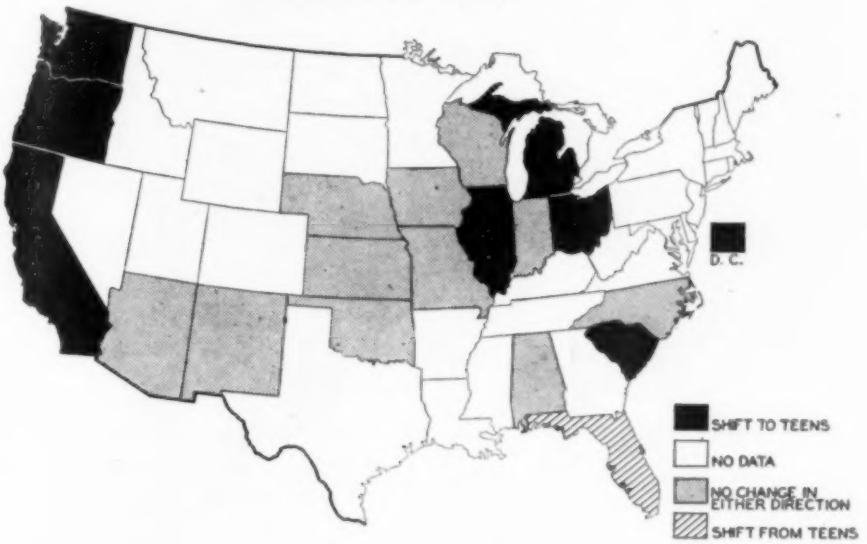
Charts 1 through 6 show for each state the changes that have occurred from 1941 to 1944 in the age distribution of females acquiring syphilis.

The study reveals that a shift into the teen ages has by no means been nation-wide; nor has it been constant from one year to another. Furthermore, the areas affected have not been the same for whites and Negroes. Many states show no shift of any kind, and some states show a shift away from the teens. Among the white females, California was the only state which exhibited an increasing tendency toward teen age infections through the whole study period. On the other hand, Florida shifted to the teens from 1941 to 1942; shifted back to the older ages between 1942 and 1943, and showed no change from 1943 to 1944. Among Negro females, Florida and South Carolina showed a constant trend toward the teen ages; whereas Missouri was different in every period. Certainly for both races, fewer states experienced a shift to the teens than experienced no shift or a shift to the older ages.

Among the few large cities studied, there was also no particular consistency in the results obtained. No change of any kind was noted in St. Louis in any year for either race. In the District of Columbia among white females, there was a shift to the older ages from 1941 to 1942, to the teens from 1942 to 1943, with no change occurring between 1943 and 1944. Among colored females, on the other hand, there was a shift to the teens in the first and last paired years with no change shown between 1942 and 1943. No change occurred among white females in New York City, but there was a shift to the teens among colored females from 1942 to 1943. Among white females in Chicago, no change was noted from 1942 to 1943

* The method of analysis is described on page 510 of this issue.

CHART 2—Changes in Age Distribution of White Females Infected with Syphilis Admitted to Public Clinics, 1942–1943



or from 1943 to 1944. There was a significant differenece between 1941 and 1942 but no particular pattern could be found. There was a significant shift to the teens between 1941 and 1942 and between 1942 and 1943 among colored females in Chicago; but they shifted back again to the older years significantly in 1943 and 1944.

The sample on which the foregoing analysis was based is fairly representative of the country as a whole; including large parts of the midwest, far west, and southwest, and four large cities. When

CHART 3—Changes in Age Distribution of White Females Infected with Syphilis Admitted to Public Clinics, 1943–1944

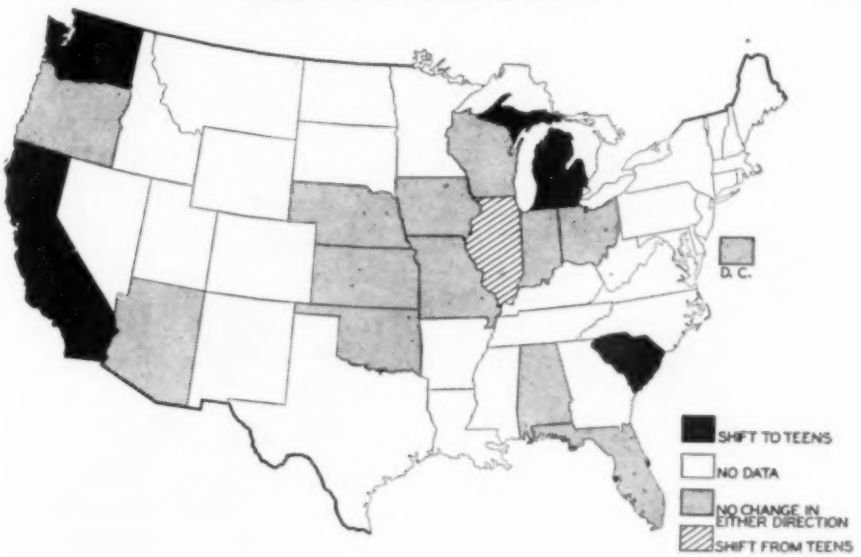
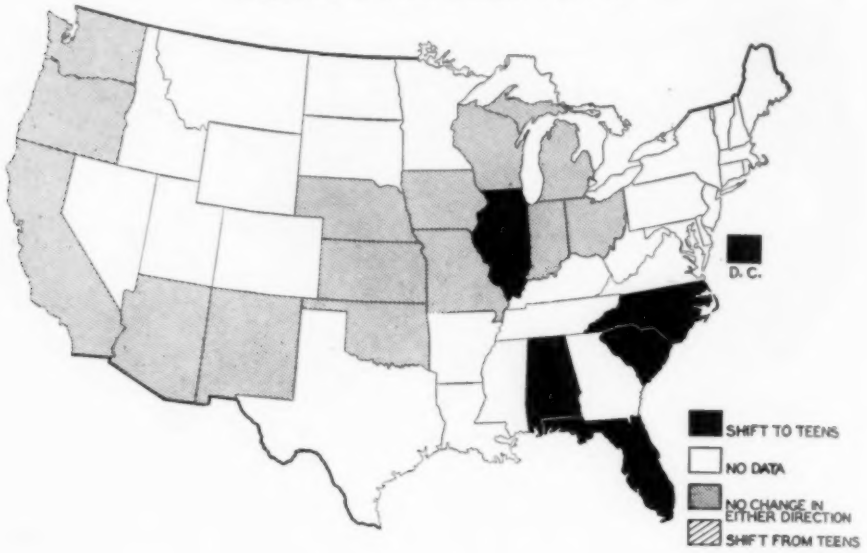


CHART 4—Changes in Age Distribution of Negro Females Infected with Syphilis Admitted to Public Clinics, 1941–1942



it was found that the changes taking place varied widely from one place to another, a search was made for factors which might be possible causes of this disparity.

The two most obvious factors operating to change the populations of various areas of the country during the period under consideration were: (1) the induction of large numbers of young men into the armed forces and their mobilization at various places for training and embarkation, and (2) the concurrent concentration of civilian

CHART 5—Changes in Age Distribution of Negro Females Infected with Syphilis Admitted to Public Clinics, 1942–1943

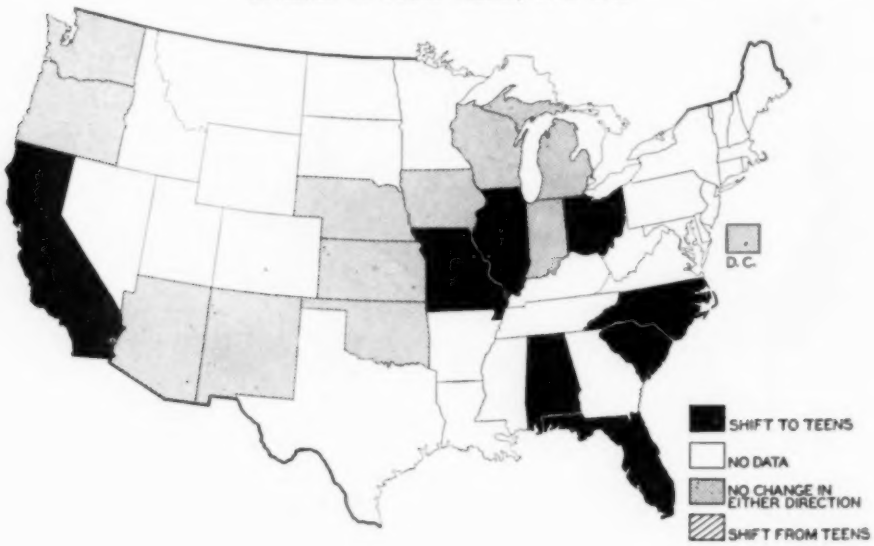


CHART 6—Changes in Age Distribution of Negro Females Infected with Syphilis Admitted to Public Clinics, 1943–1944

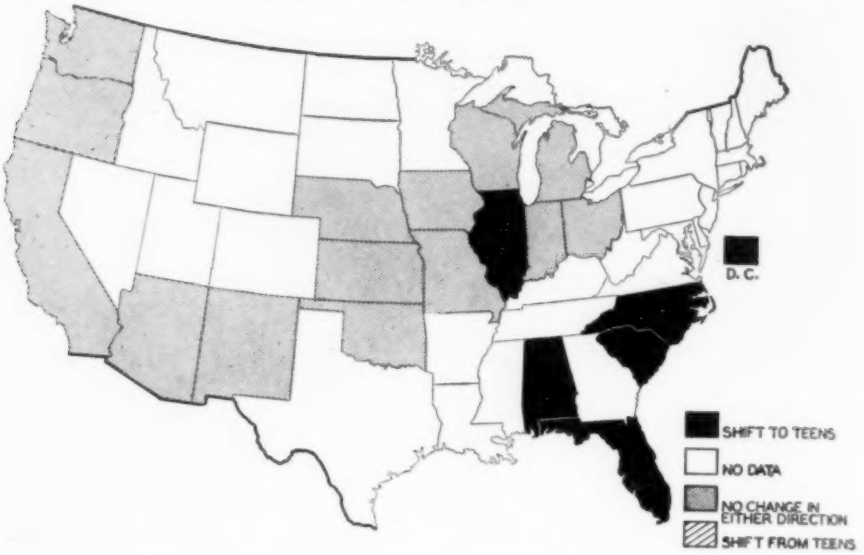
population where war industries were being developed. Both of these changes, of course, led to a corresponding decrease in population in non-strategic areas.

Military movements did not change the populations of individual states to any appreciable degree until the period 1942–1943.[7, 8] By 1943, the peak year of concentration in the United States, military personnel comprised over 5 per cent of the population in 12 of the 20 states included in this study. This minimum proportion takes on added significance when it is considered that it included persons in high venereal disease incidence age groups living in an unstable social environment. After 1943, with the shipment of troops abroad, the military population declined. By 1944, military population constituted 4.5 per cent of the whole population as compared to the 5.2 per cent in 1943.

Since 1940 there has been a movement of civilians toward centers of industry.[7, 8] Estimated civilian population figures as of November, 1943, showed that 82 of the 137 metropolitan districts of the United States increased by 10.4 per cent while the remaining 55 decreased by 5.6 per cent.[8] Due to the fact that many men had been removed from civilian life, a great proportion of this increasing concentration at war industry points was made up of women. There was an 11 per cent increase in female population in urban areas from April, 1940, to July, 1944.[8] The number of women employed in the United States rose from approximately 12 million in December, 1941, to 16½ million in March, 1944.[9] Furthermore, 29 per cent of women employed since December, 1941, have been under 20 years of age as compared with 3 per cent of those who were employed in March, 1941, and December, 1941.[9] Therefore, since women have played an increasingly important rôle in industry during the four years under consideration, and have been employed at an earlier age than formerly, it is reasonable to believe that a large number of teen age girls were included in the labor movements.

Charts 7 and 8 show the above changes in civilian and military population graphically, in association with

CHART 4—Changes in Age Distribution of Negro Females Infected with Syphilis Admitted to Public Clinics, 1941–1942



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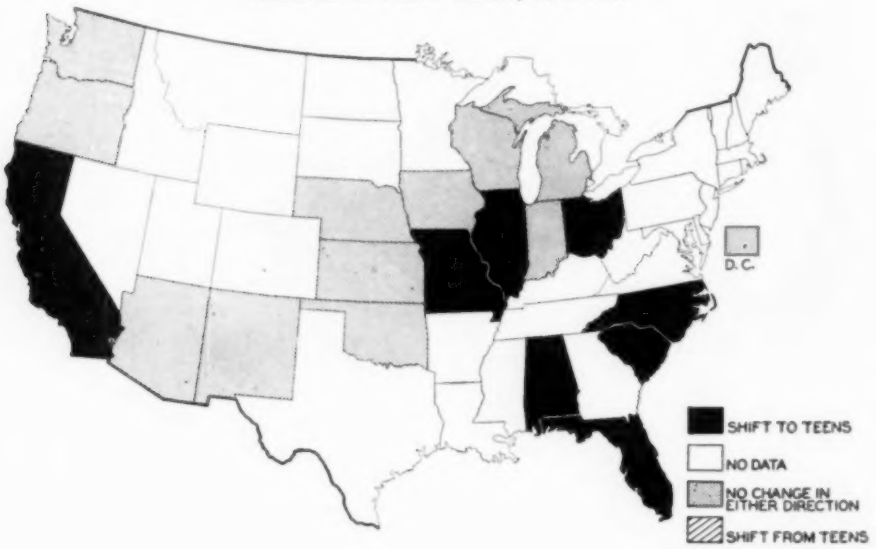

CHART 6—Changes in Age Distribution of Negro Females Infected with Syphilis Admitted to Public Clinics, 1943–1944

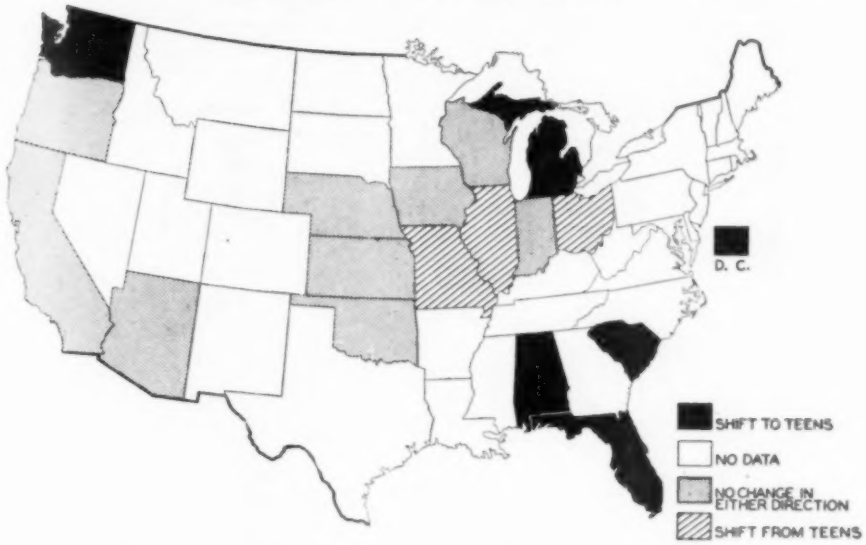

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CHART 7—Age Shifts Among White Females

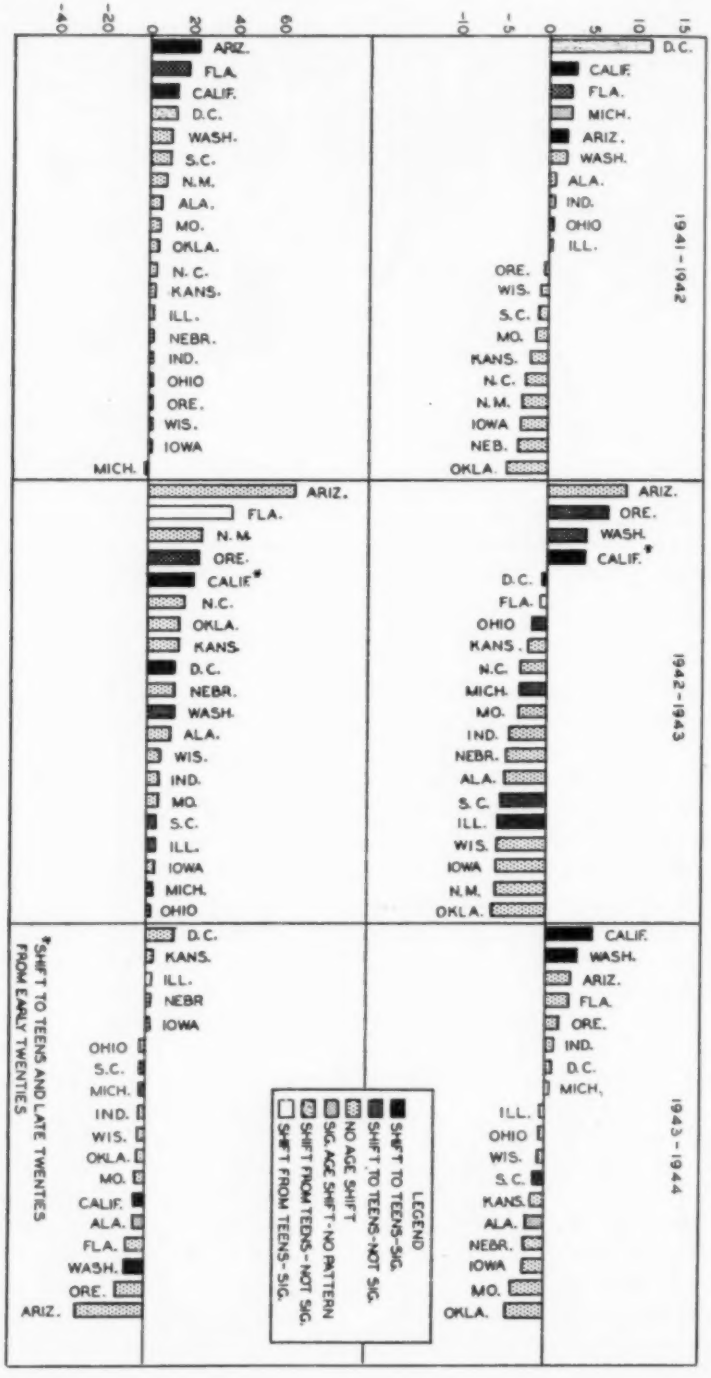
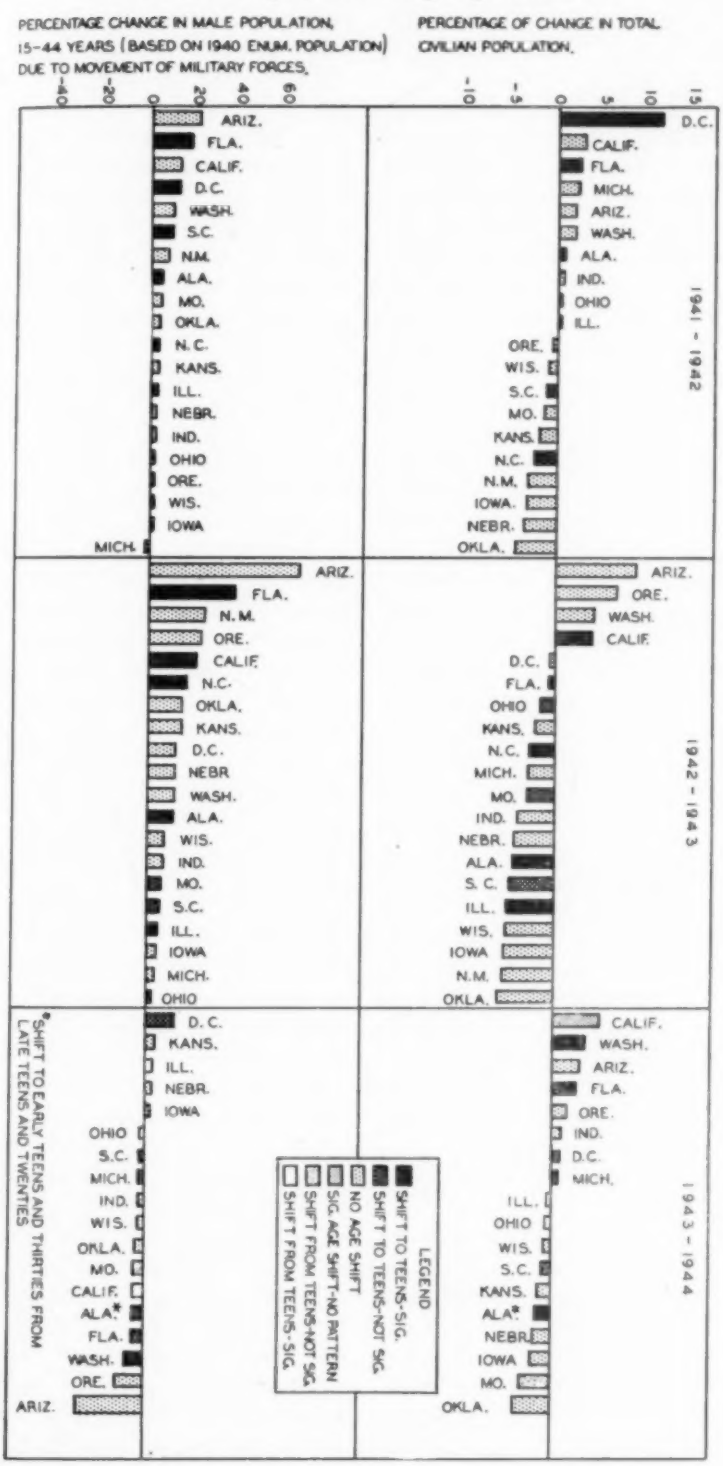

PERCENTAGE CHANGE IN MALE POPULATION, 15-44 YEARS (BASED ON 1940 ENUM. POPULATION) DUE TO MOVEMENT OF MILITARY FORCES.
PERCENTAGE OF CHANGE IN TOTAL CIVILIAN POPULATION.
-40 -20 0 20 40 60
-10 -5 0 5 10 15
1941-1942
ARIZ. FLA. CALIF. D.C. WASH. S.C. N.M. ALA. MO. OKLA. N.C. KANS. ILL. NEBR. IND. OHIO ORE. WIS. IOWA MICH.
D.C. CALIF. FLA. MICH. ARIZ. WASH. ALA. IND. OHIO ILL. ORE. WIS. S.C. MO. KANS. N.C. N.M. IOWA NEB. OKLA.
1942-1943
ARIZ. FLA. N.M. ORE. CALIF.* N.C. OKLA. KANS. D.C. NEBR. WASH. ALA. WIS. IND. MO. S.C. ILL. IOWA MICH. OHIO
ARIZ. ORE. WASH. CALIF.* D.C. FLA. OHIO KANS. N.C. MICH. MO. IND. NEBR. ALA. S.C. ILL. WIS. IOWA N.M. OKLA.
1943-1944
*SHIFT TO TEENS AND LATE TWENTIES FROM EARLY TWENTIES
D.C. KANS. ILL. NEBR IOWA OHIO S.C. MICH. IND. WIS. OKLA. MO. CALIF. ALA. FLA. WASH. ORE. ARIZ.
CALIF. WASH. ARIZ. FLA. ORE. IND. D.C. MICH, ILL. OHIO WIS. S.C. KANS. ALA. NEBR. IOWA MO. OKLA.
LEGEND
SHIFT TO TEENS-SIG.
SHIFT TO TEENS-NOT SIG.
NO AGE SHIFT
SIG. AGE SHIFT-NO PATTERN
SHIFT FROM TEENS-NOT SIG.
SHIFT FROM TEENS-SIG.

CHART 8—Age Shifts Among Negro Females


PERCENTAGE CHANGE IN MALE POPULATION, 15-44 YEARS (BASED ON 1940 ENUM. POPULATION) DUE TO MOVEMENT OF MILITARY FORCES.
PERCENTAGE OF CHANGE IN TOTAL CIVILIAN POPULATION.
-40 -20 0 20 40 60
-10 -5 0 5 10 15
1941 - 1942
ARIZ. FLA. CALIF. D.C. WASH. S.C. N.M. ALA. MO. OKLA. N.C. KANS. ILL. NEBR. IND. OHIO ORE. WIS. IOWA MICH.
D.C. CALIF. FLA. MICH. ARIZ. WASH. ALA. IND. OHIO ILL. ORE. WIS. S.C. MO. KANS. N.C. N.M. IOWA NEBR. OKLA.
1942 - 1943
ARIZ. FLA. N.M. ORE. CALIF. N.C. OKLA. KANS. D.C. NEBR. WASH. ALA. WIS. IND. MO. S.C. ILL. IOWA MICH. OHIO
ARIZ. ORE. WASH. CALIF. D.C. FLA. OHIO KANS. N.C. MICH. MO. IND. NEBR. ALA. S.C. ILL. WIS. IOWA N.M. OKLA.
1943 - 1944
*SHIFT TO EARLY TEENS AND THIRTIES FROM LATE TEENS AND TWENTIES
D.C. KANS. ILL. NEBR. IOWA OHIO S.C. MICH. IND. WIS. OKLA. MO. CALIF. ALA.* FLA. WASH. ORE. ARIZ.
CALIF. WASH. ARIZ. FLA. ORE. IND. D.C. MICH. ILL. OHIO WIS. S.C. KANS. ALA.* NEBR. IOWA MO. OKLA.
LEGEND
SHIFT TO TEENS-SIG.
SHIFT TO TEENS-NOT SIG.
NO AGE SHIFT
SIG. AGE SHIFT-NO PATTERN
SHIFT FROM TEENS-NOT SIG.
SHIFT FROM TEENS-SIG.

the changes in age distribution of female infections with syphilis. The patterns for the two races turned out to be entirely different. Chart 7 presents the situation among white females and Chart 8 that among Negro females.

A tendency toward an earlier age of infection among white females seems to be definitely associated with an increasing civilian population. Part of this, of course, may be due to the uncovering of a greater proportion of existing teen age infections by preëmployment and other industrial blood testing programs. When the years 1941 and 1942 are compared, every area in which there was a teen age shift showed an appreciable increase in population. It is true that the District of Columbia, with a great civilian increase in population, showed a shift away from the teen ages; this, however, is actually not a contradiction but rather can be considered as confirmatory evidence, since practically all the population increase in the District of Columbia consisted of older individuals. There is little or no industry in Washington, and the lower age limit for government workers is 18.

When 1942 and 1943 are compared, the association is not so clear as in the previous year, but is still noticeable. And, in 1943 and 1944 the relation between the increase in industrial population and early infection with venereal disease becomes much more apparent. In the two areas in which there were significant shifts toward the teen ages, the civilian population increased more than any other area. And the area that showed a significant shift away from the teens experienced a slight decrease in civilian population.

Increasing military populations seem to have little or no tendency to be associated with an increased proportion of teen age infections among white females. There is no doubt that this is in large measure due to the effective venereal disease control measures carried out by the military authorities in coöperation with civilian agencies. From 1941 to 1942 the teen age shift among whites did occur in those states showing the greatest increase in military population, but these were the states that also showed increased civilian populations.

Furthermore, in 1942 and 1943, no association was found between teen age infections and increasing military population, and in 1943 and 1944, it becomes clearly apparent that the shift is much more closely associated with civilian population increases. In the two areas in which there were significant shifts to the teen ages, the military population decreased, and appreciable increase in military population took place in the one area which showed a significant shift from the teens. These observations become even more significant in the light of the fact that at the end of 1942 the draft was extended to include boys 18 and 19 years of age.

The pattern for the Negroes was not so consistent as that for the whites. In 1941 and 1942 there was a clear association between an increasing military population and teen age shifts, but none between civilian increases in population and such shifts. In 1942 and 1943 there is still an apparent tendency for an earlier age of infection in areas with increasing military population, and still no association with civilian increases. However, in 1943 and 1944, the pattern resembles that of the whites, with increasing civilian population rather than increasing military population being the most noticeable influencing factor.

Actually of course, it is probably true that the Negro pattern is not so very different from that of the white, since most of their industrial movements did not take place until more recent years when the labor shortage became very acute. Most of the Negro industrial population movements did not take

place until 1943, and it is in the comparison of 1943 and 1944 that we find the greatest changes in the age at which syphilis is acquired.

In California for 1942 and 1943, and in Alabama for 1943 and 1944, the age pattern differed from the other areas. They have both been shown on the charts as a shift toward the teens. However, what actually occurred was that there was a shift both toward the teens and toward the older years away from the twenties. In both of these states the explanation might very well be that there are two types of shifting labor, industrial and agricultural.

The public health significance of these data is readily apparent. Throughout the war period it has been more or less accepted as a fact that concentration of military forces in an area constituted the chief venereal disease control problem to be met. The data which have just been presented, however, do not warrant any such assumption. Rather it is the occurrence of unusual industrial activity which represents the graver epidemiologic venereal disease problem. This is understandable when we think of the growing proportion of young immature girls being employed in industry and the almost necessarily transient nature of the present-day industrial portion of our population. Sir William Beveridge has listed as one of the three necessary [10] conditions of full employment the "organized mobility of labour," and the present Congress is considering measures to insure full employment in this country.

It seems indicated that more intelligent program planning is possible from study of the population groups encountered or expected in an area of health jurisdiction. For instance, venereal disease activities should be strengthened wherever an appreciable expansion in industry is anticipated. Furthermore, it might be well for health officers to study the general public health problems inherent in a transient population which follows changing employment opportunities from one section of the country to another. The removal of the individual from the usual restraining influences of a familiar environment introduces other health hazards in addition to the venereal disease, for example tuberculosis and the nutritional diseases.

The implementation of a complete program which will control these ills depends, of course, on many agencies other than the health departments. Their prevention will lie in good part with welfare and social agencies within the community. The exposure rate rises with the removal of young girls from their homes and from school to overcrowded areas without adequate housing, recreation, and other normal living conditions. The provision of healthful places to live, normal places to play, and opportunities for further education depends on the activities of agencies concerned with the social welfare. To this the health departments must add good epidemiology and treatment of all disease. A well rounded and thoroughly adequate program depends upon the close integration of all these factors.

REFERENCES

1. Milliken, Rhoda J. Why Policewomen? *Bull. Massachusetts Soc. Social Hyg.*, 13:5, 1943.

2. Stokes, John A. Discussion. *J.A.M.A.*, 120:882, 1942.

3. Taft, Charles P. Juvenile Delinquency in Its Relation to the War Effort. *J. M. A. Alabama*, 13:93, 1943.

4. Webb, Mary Louise. Delinquency in the Making. *J. Social Hyg.*, 29:502, 1943.

5. Hirsh, Joseph. Boomtown Wins a Battle. *J. Social Hyg.*, 29:583, 1943.

6. Rosenthal, Theodore and Kerchner, George. Trend in Age of Acquiring Venereal Disease in New York City, 1940–1943. *Ven. Dis. Inform.*, 25:361, 1944.

7. Unpublished Civilian and Military Population Data Furnished by Bureau of the Census, Washington, D. C.

8. Population—*Spec. Rep.* Series P-44, Nos. 3 & 11; Series P-45, No. 2; Series P-S, No. 4. Bureau of the Census, Washington, D. C.

9. Pidgeon, Mary Elizabeth. Changes in Women's Employment During the War. *Spec. Bull. No. 20.* Women's Bureau, Department of Labor, 1944.

10. Beveridge, Sir William H. *Full Employment in a Free Society.* New York, Norton, 1945.

The Use of 2 x n Chi Square in the Analysis of Change in Age Distributions

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RECENTLY the statistical section of the Venereal Disease Division, U.S.P.H.S., was confronted with the problem of determining whether persons under 20 were becoming infected with syphilis more frequently during the war period. There was available a large body of data consisting of tabulations for the years 1941–1944 showing the number of patients with early syphilis admitted to public clinics by age, race, and sex.

Various methods of analyzing the data were considered. Averages, such as the mean, median, or mode, together with their appropriate standard errors, are the statistics most frequently employed for determining changes in frequency distributions and measuring their extent and significance. All of these measures were discarded as unsuitable for the purpose at hand. The mean was not used because (1) it is unduly affected by cases occurring at extremely low and high age levels, (2) it is possible for changes in one part of the distribution to be balanced by changes in another part and thus not be reflected by any change in the mean. The median age, the point above and below which an equal number of cases fall, is the most commonly used average in analyzing data of this kind, because its insensitivity to extreme items makes it preferable to the mean. However, it and the mode, which is the point at which the frequency is greatest, are basically merely division points in the distribution and do not depend on the values of the individual items. Therefore they quite often do not reflect changes which may be of considerable importance. Furthermore the standard errors associated with them are relatively large and are subject to certain theoretical restrictions which make them of doubtful value for the present purpose. Therefore, the mean, median, and mode were all considered to be inadequate for the statistical analysis of shifts in the age distribution of syphilis.

Instead of using averages, then, it was decided to consider the data as a whole by directly comparing the age distributions from one year to the next. To test significance of changes in these distributions, Chi square tests were set up for each pair of adjacent years. Where small numbers of cases were reported, age-years were combined in order to obtain a frequency of at least 5 in each cell; and in a few instances, it was also necessary to combine states for the same purpose.

The following formula for Chi square in a 2 x n contingency table was developed in a form which gives the contribution of each pair of frequencies to the total Chi square and which is convenient for machine computation.

TABLE 1

Changes in the Age Distribution of Negro Females with Early Syphilis Admitted to Clinics in the State of Alabama, 1941–1942

Age	Cases Admitted during 1941		Cases Admitted during 1942		Per cent Change in Percentage (1941–1942)	Contribution to χ^2
	Number (f)	Per cent	Number (f′)	Per cent		
10–13	22	0.6	16	0.5	−16.7	.76
14	39	1.2	54	1.7	+41.7	2.93
15	79	2.4	108	3.4	+41.7	5.48
16	136	4.1	148	4.6	+12.2	.97
17	185	5.6	244	7.6	+35.7	10.13
18	243	7.3	311	9.7	+32.9	10.68
19	276	8.3	306	9.5	+14.5	2.66
20	299	9.0	263	8.2	−8.9	1.29
21	279	8.4	234	7.3	−13.1	2.63
22	281	8.5	257	8.0	−5.9	.44
23	231	7.0	214	6.7	−4.3	.22
24	209	6.3	187	5.8	−7.9	.62
25	194	5.9	167	5.2	−11.9	1.24
26	131	4.0	116	3.6	−10.0	.49
27	121	3.6	114	3.6	....	.04
28	109	3.3	86	2.7	−18.2	2.02
29	62	1.9	67	2.1	+10.5	.39
30	88	2.7	64	2.0	−25.9	3.06
31	46	1.4	26	0.8	−42.9	4.93
32	50	1.5	52	1.6	+6.7	.13
33	32	1.0	36	1.1	+10.0	.38
34	26	0.8	19	0.6	−25.0	.88
35	25	0.8	14	0.4	−50.0	2.76
36	27	0.8	18	0.6	−25.0	1.52
37	21	0.6	21	0.7	+16.7	.01
38	25	0.8	11	0.3	−62.5	5.00
39	24	0.7	15	0.5	−28.6	1.80
40	12	0.4	10	0.3	−25.0	.12
41	8	0.2	5	0.2	....	.60
42	10	0.3	8	0.2	−33.3	.16
43–44	10	0.3	7	0.2	−33.3	.44
45–46	7	0.2	4	0.1	−50.0	.72
47–50	9	0.3	9	0.3	....	.01
Total	3,316	100.0	3,211	100.0		65.51

$p = .508044$

$q = .491956$

$$\frac{1}{pq} = \frac{1}{.249935} = 4.001040$$

$$\frac{p}{q} = 1.032702$$

$$\frac{p}{q} + 2 = 3.032702$$

$$\chi^2 = \sum_j \left[\frac{f_j^2}{f_j + f'_j} \frac{1}{pq} + f'_j \frac{p}{q} - f_j \left(\frac{p}{q} + 2 \right) \right] \quad \text{(a)}$$

$$= \frac{\sum_j \left(\frac{f_j^2}{f_j + f'_j} \right) - \frac{F^2}{F + F'}}{pq} \quad \text{(b)}$$

Where f_j = cases j years of age reported during one year.

f'_j = cases j years of age reported during the succeeding year.

$F = \sum_j f_j$

$F' = \sum_j f'_j$

$p = \frac{F}{F + F'}$

$q = \frac{F'}{F + F'}$ or $1 - p$

Formula (a) was used to obtain the

contribution of each item to the total Chi square. Formula (b) is equivalent to the familiar one developed by Brandt and Snedecor.[1] It was used to compute the total Chi square directly, the summation of the individual results obtained by the use of formula (a) serving as a check on the total Chi square from formula (b). The computations involve little more labor than is required for the means and standard deviations, since the individual contributions generally need be determined only when the total Chi square is found to be significant. If only the total is desired, the

$$\frac{f_j^2}{f_j + f'_j}$$

can be cumulated in the machine, and a convenient check can be obtained by repeating the operation with f_j and f'_j interchanged. The entire calculation is self-checking if the individual contributions to the total Chi square are determined.

Application of these formulae set up for the Negro females, 1941–1942, in the State of Alabama gave the results shown in Table 1. In analyzing the result of the procedure in this instance, it was determined by entering in the table of χ^2 with (n-1) degrees of freedom that the probability of occurrence of a Chi square as large as that found for the total distribution (65.51) was far less than .01, indicating that the age distribution of syphilis incidence in Alabama in 1942 was significantly different from the distribution in 1941. Furthermore, from the contributions of individual years of age to the total Chi square, it was readily seen that there had been significant increases in cases of early syphilis in the ages 14–19 years, with compensating decreases in the remaining age-years. For the same data, both the mean and median ages were lower in 1942 than in 1941, the median dropping from 21.4 to 20.7, and the mean from 23.0 to 22.2. Both of

TABLE 2

Changes in the Age Distribution of White Females with Early Syphilis Admitted to Clinics in the State of Michigan, 1942–1943

Age	Cases Admitted during 1942		Cases Admitted during 1943		Per cent Change in Percentage (1942–1943)	Contribution to χ^2
	Number (f)	Per cent	Number (f')	Per cent		
10–17	12	9.2	11	6.9	−25.0	.46
18–19	13	9.9	23	14.5	+46.5	1.19
20–21	15	11.5	27	17.0	+47.8	1.52
22	7	5.3	7	4.4	−17.0	.13
23	7	5.3	13	8.2	+54.7	.84
24–25	10	7.6	28	17.6	+131.6	5.46
26–28	16	12.2	10	6.3	−48.4	2.81
29–31	15	11.5	11	6.9	−40.0	1.65
32–37	21	16.0	13	8.2	−48.8	3.78
38–41	6	4.6	6	3.8	−17.4	.11
42–50	9	6.9	10	6.3	−8.7	.03
Total	131	100.0	159	100.0		17.98

$p = .451724$

$q = .548276$

$$\frac{1}{pq} = \frac{1}{.247669} = 4.037647$$

$$\frac{p}{q} = .823899$$

$$\frac{p}{q} + 2 = 2.823899$$

these differences are significant, being in each case greater than 2.575 times the standard error. These statistics, however, give no indication of the specific age-years undergoing changes in incidence.

In other instances the mean and median not only failed to give a complete picture of the situation but yielded results which were actually misleading. For example, among white females in the State of Michigan (Table 2) the median age fell from 25.2 in 1942 to 22.9 in 1943, and the mean age from 27.4 to 25.3. When tested for significance, the probabilities of each of these differences fell between the .01 and .02 limits in a table of relative deviates. However, Chi square tests on the same data proved that no specific teen-age year underwent a significant change, nor did the total Chi square indicate a significant difference between the 2 years.

On the other hand, in some instances, the Chi square test showed that a significant shift to the teens from older age-years had taken place, when both the mean and median failed to show any significant change. An analysis of the data for Negro females in New York City, 1942–1943 given in Table 3 illustrates such a case. While no individual age among the earlier age-years showed a highly significant change, the prob-

TABLE 3

Changes in the Age Distribution of Negro Females with Early Syphilis Admitted to Clinics in New York City, 1942–1943

Age	Cases Admitted during 1942		Cases Admitted during 1943		Per cent Change in Percentage (1942–1943)	Contribution to χ^2
	Number (f)	Per cent	Number (f')	Per cent		
10–14	7	0.8	11	0.8	....	.05
15	7	0.8	17	1.3	+62.5	1.51
16	13	1.4	32	2.5	+78.6	2.95
17	31	3.4	68	5.3	+55.9	4.24
18	57	6.2	95	7.3	+17.7	1.01
19	79	8.6	133	10.3	+19.8	1.57
20	84	9.1	118	9.1	....	.... *
21	122	13.3	141	10.9	−18.0	2.58
22	114	12.4	143	11.0	−11.3	.86
23	127	13.8	147	11.4	−17.4	2.65
24	81	8.8	91	7.0	−20.5	2.21
25	42	4.6	61	4.7	+2.2	.02
26	24	2.6	45	3.5	+34.6	1.29
27	28	3.0	42	3.2	+6.7	.07
28	15	1.6	36	2.8	+75.0	3.07
29	12	1.3	9	0.7	−46.2	2.11
30	18	2.0	20	1.5	−25.0	.54
31	10	1.1	9	0.7	−36.4	.97
32	10	1.1	20	1.5	+36.4	.83
33–34	5	0.5	23	1.8	+260.0	6.45
35–36	16	1.7	10	0.8	−52.9	4.30
37–39	6	0.7	12	0.9	+28.6	.50
40–43	6	0.7	5	0.4	−42.9	.77
44–50	5	0.5	7	0.5	....	.... *
Total	919	100.0	1,295	100.0		40.55

$p = .415086$

$q = .584914$

$$\frac{1}{pq} = \frac{1}{.242790} = 4.118786$$

$$\frac{p}{q} = .709653$$

$$\frac{p}{q} + 2 = 2.709653$$

* Less than .005

ability of occurrence of so large a total Chi square fell between .01 and .02, indicating that a significant change had taken place in the entire distribution. The mean age in this group was 22.7 in 1942 and 22.4 in 1943; the median age was 21.5 in 1942 and 21.2 in 1943. These differences were not significant, the probability of the occurrence of each being well above .10.

These few examples serve to illustrate some of the advantages of the 2 x n Chi square in the analysis of changes in frequency distribution.* As far as we have been able to determine, it has not been extensively used for this purpose. It is, however, an excellent tool for such analyses, since it is sensitive to changes at any point in the distribution and is capable of indicating the points showing the greatest changes. For this reason it is more flexible and more productive of information than the mean or the median.

REFERENCE

1. Fisher, R. A. *Statistical Methods for Research Workers.* Edinburgh: Oliver and Boyd, 5th ed., 1934, p. 90.

* A study based on this method of analysis is reported by J. R. Heller on page 501 of this journal.

Report of the Chairman of the Executive Board of the American Public Health Association to the Governing Council—1945

ONE may draw some significant conclusions from a review of Association affairs covering the fifteen months that have elapsed since the Second Wartime Conference in New York City in October, 1944, to the end of 1945. An atmosphere has been created in this 74 year old professional society which attracts new projects eminently suitable for development under its sponsorship. It is an atmosphere, further, which attracts the professionally competent, so that any project is assured of advancement under favorable auspices. It is an atmosphere which not only attracts but which holds both projects and persons until the job is done. The qualities of courage and farsightedness displayed by the Association have created the magnetism which brings into our sphere of influence the dynamic issues with which we have been dealing in 1945.

During this momentous period the world passed from deep preoccupation with war to deep preoccupation with peace. To no group of persons anywhere could the coming of peace mean more professionally and personally than to the world-wide fraternity of public health workers. To this Association it brought challenges at very practical levels, some of which I shall review in this report. Even though the manifold activities of the Association preclude a systematic account of all that has fallen within the purview of the Executive Board, I shall offer no apology for choosing certain matters for special emphasis on which the Governing Council should be specially informed.

ACCREDITATION OF SCHOOLS OF PUBLIC HEALTH

The need for the raising of an authoritative voice with regard to facilities for educating and training for the public health professions has long been manifest, but it was never so urgent as in the spring of 1945 when the European war had ended and the war in the Pacific was coming to its conclusion. Greatly increased demands for public health training were foreseen through the removal of financial barriers in the United States by the G. I. Bill of Rights. There was also a proper concern on the part of the federal government to assure to veterans an adequate return on scholarship funds. The Committee on Postwar Training and Recruitment of the U. S. Public Health Service and the Association of Schools of Public Health turned to the Association and invited it to undertake a program of accreditation of institutions considered competent to offer courses for postgraduate training in public health. The Committee on Professional Education, under the Chairmanship of Dr. William P. Shepard, has had this subject under consideration since 1942 and, with the approval of the Executive Board, it accepted the task.

An editorial in the September issue of the *American Journal of Public Health* described the situation which has ex-

isted in North America, outlined the proposal to the committee and the plan of procedure adopted. The Commonwealth Fund has generously assured the financing for three years. With Professor C.-E. A. Winslow as Consultant on Criteria and Assistant Consultants especially engaged for the visit to each institution, this project advanced during the year to a point where institutions accredited by the Association to give the Master of Public Health degree (Diploma in Public Health in Canada) could be announced early in 1946, in our official *Journal* and elsewhere, together with the criteria governing accreditation. The next move is in the direction of accrediting institutions to give the Doctor of Public Health degree and thereafter to extend the program to consideration of other graduate training and perhaps to field training centers. If there be any fear that the attainment of these objectives will result in a pattern of conformity which will leave no room for experimentation and imagination in our schools of public health, it may be dispelled by the philosophy of the Committee on Professional Education so well expressed by its Chairman: "Just as the committee recognizes that requirements for professional qualifications of public health workers must be fluid, so it recognizes that teaching in schools of public health must remain dynamic and free from the confining influences of rigidly prescribed curricula or standards. Hence the committee is resolved that its accreditation shall be an incentive to experimentation and diversity rather than an influence for forcing education for the public health professions into a uniform mold. It will suggest only very broad principles both of organization and of curriculum, but will insist on a set of minimum criteria representing the best consensus of opinion of both teachers and practitioners."

The accreditation program is an example of the kind of responsibility which is entrusted to the Association and which it is equipped to assume and discharge with distinction.

VOCATIONAL COUNSELING AND GUIDANCE PROGRAM

When the war ended, more than 1,000 members of the Association were in one or another of the military services. With many the future was as secure as futures can be in this uncertain world. They would return to the positions they had held previously in public health. With others too young perhaps to be established before they put on the uniform, or with inclinations altered as a result of new influences, there appeared to be opportunity for expanded usefulness through the Association's Employment Service if it could be strengthened by full-time trained personnel in the Central Office. While the Executive Board and the Committee on Professional Education were considering how this could be done, the U. S. Public Health Service, faced with hundreds of inquiries from returning veterans regarding post-war opportunities in public health, saw the advantages of single agency handling of such matters, and was receptive to a coöperative arrangement with the Association to make it possible. As a result, a Vocational Counseling and Guidance Service has been established in the Association for public health workers and employers. With federal funds well trained consultants have been attached to the Central Office staff to supply information and advice. The staff supplies not merely information as to existing jobs, but as to qualifications and training opportunities for the various public health specialties. The Executive Secretary continues, as formerly, to give personal attention to employment and counseling service. In this undertaking there is continuous and close coöperation with the Public Health Service

through the Surgeon General's Committee on Postwar Training and Recruitment. While the first emphasis was upon the veteran, it was soon apparent that the large number of vacancies could not be filled with qualified personnel from this category alone, and the base of operation widened spontaneously to include non-veterans as well.

On December 31, 1945, the Employment Register listed 150 openings offered by 75 employers and 105 trained candidates for positions. Intensive efforts are being carried forward to make known the availability of the service and to stimulate state and city health departments to make full use of it in building up depleted staffs.

An activity related to the Counseling Service is the brochure, *Employment Opportunities in Public Health*, published by the Committee on Professional Education at the request of the War Manpower Commission. Of the 15,000 copies printed, 13,000 were made available to the U. S. Public Health Service and to the War Manpower Commission for use in Separation Centers. Another pamphlet, *Careers in Public Health*, is in preparation, also under the supervision of Dr. Shepard's committee, designed for the use of vocational counsellors in high schools and colleges. It will be published and distributed before the end of the present academic year.

NEW ACTIVITIES OF THE SUBCOMMITTEE ON MEDICAL CARE

When the Governing Council last met, on October 2 and 4, 1944, the most important item on the agenda was a Report on Medical Care from the Committee on Administrative Practice. The report was approved by a large majority and has since been widely distributed as an official declaration of the Association, affirming the Association's belief that a program of medical care designed to reach all the people is essential and its conviction that an overall program can be realized within ten years. The declaration proposed a simultaneous attack on five fronts—(1) development of administrative organization to provide services; (2) facilities for distribution of costs; (3) advancing the training of personnel; (4) promoting construction of facilities; and (5) the improvement of knowledge. From this action of the Governing Council have stemmed two important developments just now arrived at a stage where they can be announced, after months of preliminary negotiation and planning.

The first will implement the work of the Subcommittee on Medical Care directly. The subcommittee, through the generosity of the Rockefeller Foundation, becomes the recipient of a financial grant to establish an office with full-time technical staff, and it will turn its attention immediately to a review of proposed federal and state health legislation, recommending to the Association the stand it should take with regard to such legislation in the light of its declared principles. The subcommittee will provide information on medical care problems to the public health professions, and will attempt to stimulate leadership in the formulation and administration of medical care programs. Later on, the subcommittee hopes to formulate in detail the specifications at the technical level of good medical care programs and to describe the steps by which such programs can be established, including organization, financing, and administration. The subcommittee's initial tasks are basic to a complete understanding of the problem and to its ultimate solution.

The second development will aid in the achievement of the objectives of the Association's declaration through focus on one of them—that of the extension of knowledge. The Executive Board has approved a plan whereby the

Albert B. and Mary Lasker Foundation will annually provide a number of awards, to be given by the Association, designed to shorten the time between a scientific discovery in the field of medicine or public health and its general use in practice, particularly in a preventive way. Dr. George Baehr has accepted the chairmanship of a committee now in process of formation to chart the activities, within the interests of the Association, which these awards are planned to stimulate. First priority will be given to research with relation to the diseases which are the leading causes of death. There is also opportunity to recognize administrative achievement in the prevention and treatment of these diseases. The need for increased information among the public health professions about the causes, treatment, effective care, and prevention of these most serious diseases is obvious. The Board believes that the awards will be of value in stimulating professional effort in all these areas and in contributing to public knowledge concerning them. The contributions of health agencies or of individuals are of equal importance in the aim of the Lasker Awards. It is hoped that one or more of these awards may be conferred for the first time at the 1946 Annual Meeting.

CONDUCT OF ASSOCIATION BUSINESS IN THE ABSENCE OF AN ANNUAL MEETING

The year 1945 was the first in the Association's history when no Annual Meeting was held. The end of the war did not clear hotel and transportation facilities for convention travel even when Office of Defense Transportation regulations were removed and the Executive Board reluctantly assumed the responsibility of breaking the long tradition. Accepting the fact that an Annual Meeting in 1945 was an impossibility, the Executive Board set up a procedure for conducting necessary Association business with the Governing Council by mail. With regard to the terms of officers and committee members, it invoked Article IV of the Constitution which provides that "all officers shall serve until their successors are elected and qualified." This has had the effect of holding in office for another year all elected and appointed persons whose terms would otherwise have expired in 1945.

PARTICIPATION IN STATE AND REGIONAL MEETINGS

In partial substitution for an Annual Meeting, the Association coöperated in ten state and regional meetings. The successful tour of Western state public health association meetings with a team of speakers organized by the Executive Secretary was repeated for the third wartime spring, and in December a Victory Meeting was held in collaboration with the Public Health Association of New York City. The total attendance at these ten meetings exceeded the attendance at any of our Annual Meetings in the past. Begun as a wartime measure, there are elements of special stimulation and encouragement, particularly to the younger workers who do not have the opportunity to attend a national meeting, that point to the continuation of the traveling team of speakers in the future.

THE AMERICAN JOURNAL OF PUBLIC HEALTH

A year without the more than 200 papers and reports supplied by an Annual Meeting has had no effect upon the *Journal*, contrary to expectations. Under the able leadership of the Editor, Professor C.-E. A. Winslow, a series of especially invited historical reviews was initiated. Two have already appeared—"Evaluation of Methods to Control Air-borne Infections," by Dr. James E. Perkins, in September, "Tsutsugamushi

Disease in New Guinea," by Dr. Kenneth F. Maxcy and others in November. "Blood and Blood Derivatives," by Dr. Charles A. Janeway, is scheduled for January, 1946. Others in hand concern the Rh factor, The Public Health Aspects of Birth Control, and Insecticides, respectively. The Sections have stimulated many contributions, and these and the excellent unsolicited manuscripts reaching the Editorial Board because of the *Journal's* reputation as the most authoritative and influential magazine in its field have provided all the material necessary for the 1945 volume.

The *Journal* quietly celebrated its 35th birthday this year with a historical article in the December issue entitled "The Journal Is 35 Years Old." The average circulation of the *Journal* in 1945 was 13,300, exceeding by 811 its best previous record which was made in 1944.

SECTION ACTIVITIES

A meeting of Section Secretaries was financed by the Association early in the year to consider how the energies of Section Committees and members might be directed in a year lacking the stimulation of an Annual Meeting. In addition, four of the Section Councils—Engineering, Food and Nutrition, Health Education, and School Health have met for the same purpose. The results have been noteworthy. Section work has gone forward unabated; the deadline, which it was believed the Annual Meeting represented, apparently being only incidental.

The newest Section, that on Dental Health, has undertaken a source book on Public Health Dentistry now being written by a group of some 18 editors, chiefly dentists, but including also experts in health education, medical economics, and public health administration. A contract has already been signed with a commercial publisher for publication, with arrangement for royalties to the Association.

The Vital Statistics Section has published a directory of vital statisticians including about 900 names, a by-product of which was to bring 50 new members into the Association. It is also sharing with the Epidemiology Section membership on a Subcommittee on Morbidity Registration and Statistics of the Committee on Research and Standards. The lack of widespread morbidity reporting has long made it impossible to evaluate completely the effects of public health service, or indeed to chart accurately the needs. Particularly is this true with the present increasing importance of chronic and deteriorative diseases of an aging population.

From the Laboratory Section has come a second edition of *Diagnostic Procedures and Reagents* and a condensed Spanish edition of the eighth edition of *Standard Methods for the Examination of Dairy Products*. The ninth edition of the latter is in preparation, as is the ninth edition of *Standard Methods for the Examination of Water and Sewage*. Each is scheduled for publication before the next Annual Meeting.

The School Health Section has had an active year. It has served as one of the fourteen agencies coöperating in the publication of *School Health Policies*, a restatement and bringing up to date of current thinking with respect to health service in schools. It has organized a Rural School Health Committee, and committees to study school health legislation and preservice and in-service training of school health personnel.

The Public Health Education Section has developed a wholly new technique of committee work. In an experiment designed to increase member participation in Association and Section activities, and at the same time to

develop "grass roots" interest, its Section work has been carried on through six regional committees, each studying the resources and problems of the area in which the members live. The committees are composed of all the members of the Section in a given area. It is planned that at the Annual Meeting of the Association in 1946, the Section program will be based on this regional organization, which will give an opportunity to exchange diverse experiences and weld them into common objectives, though variously manifested.

THE STANDING COMMITTEES

Committee on Professional Education

We have discussed the Accreditation project and indicated that it resides in the Committee on Professional Education. This alone would be sufficient to engage fully the voluntary efforts of the Chairman and his colleagues, but it is only part of the story. The Merit System Unit, conducted also under the Committee on Professional Education and operating from the Central Office, has made marked progress in 1945. The Unit with the coöperation of the U. S. Public Health Service and the Children's Bureau is now ending the fifth year of its work. During that time it has sold or released a total of 163 examinations for 22 state and 2 city health departments, 54 since April, 1945. There are orders on hand at the moment for another 15 examinations. The Unit now has a stock pile of examination items in eight fields of public health—public health administration, environmental sanitation, public health nursing, public health laboratory service, vital statistics, medical social work, and beginnings have been made in health education and nutrition. This year approximately 22 per cent of the Unit's operating costs were recovered in examination fees, a proportion that will increase in future years because of the constantly accumulating file of items. Public health nursing examinations have been provided most numerously, the figures being 91 examinations in 21 states. The laboratory field is next with 50 examinations provided for 8 states and one city. Environmental sanitation is third with 30 examinations provided for 7 states and 1 city.

Recent activity of the Merit System has not, however, been limited to meeting the increased demands for examinations. During the past year the program has been expanded to include three new major subject matter areas, namely, medical social work, vital statistics, and health education. At the same time specialized material has been prepared in a number of smaller areas, as, for example, clinical pathology, entomology, physiotherapy, food and drug chemistry, and x-ray technique. The development of these new fields brings to a total of 332 the number of public health persons who have participated in the project either as constructors or reviewers.

One of the most important developments during 1945 has been the statistical evaluation of the examination material. Ten of the 22 states using Merit System Unit examinations have returned data to the Central Office and, with the addition to the staff of a statistician on a half-time basis, maximum use of this information has been made.

The Committee on Professional Education from 1937 to date has prepared reports on educational qualifications for 15 professional categories in public health which the Governing Council has approved. The latest reports—Educational Qualifications of Public Health Dentists and Educational Qualifications of Executives of Voluntary Health Associations were adopted as proposed reports by the committee in October, 1944, were published in the *Journals* of January and May, 1945, respectively, and at the end of the year, through a mail poll, in the absence of the Annual

Meeting, were approved by the Governing Council as recommendations of the Association. Nearly all are currently under revision in conformity with the well established policy of the committee. A report on Nutritionists in Health Agencies, originally adopted in 1941, will soon be before the membership for comment in revised and extended form. It is being published in the January, 1946, *Journal* as a Proposed Report and at the same time in the official Journals of its co-sponsoring agencies, the American Dietetic Association and the American Home Economics Association.

Permission has been granted for translation into Chinese of the reports on Qualifications of Public Health Laboratory Workers and Health Educators, and to the Coordinator of Inter-American Affairs for translation into both Spanish and Portuguese of the report on Health Educators. The circulation of all reports of the Committee on Professional Education, including their publication in the *Journal*, approximates the 200,000 mark. The concerns of the Committee on Professional Education for 1945, therefore, have involved professional qualifications of public health personnel, the promotion, extension, and interpretation of merit system methods for all such personnel, recognition of acceptable training institutions, and recruitment policies that will result in an increasing body of trained and equipped personnel for public health leadership today and tomorrow. The Chairman and the committee are aware that this quartet of activities needs to be supplemented by a fifth, namely a knowledge of and concern for the salary standards current in public health. The committee is committed to a salary study and is planning for it in the coming year.

Committee on Administrative Practice

The Subcommittees of the Committee on Administrative Practice, Wilton L. Halverson, M.D., Chairman, in addition to that on Medical Care mentioned earlier, include Local Health Units, Evaluation of Administrative Practices, Accident Prevention, and State and Local Health Administration. Under the supervision of the last named, the field work has gone on without interruption, even with an interval of several months between the resignation in July of Dr. George T. Palmer, Associate Field Director, and the recent appointment of his successor, Roscoe P. Kandle, M.D., M.P.H. From October, 1944, to December, 1945, public health studies have been made in Madison County, Illinois, in San Francisco, in Sacramento, and state studies in Utah, Idaho, and Colorado. This subcommittee also is responsible for enlarging the Reporting Area through the use of the *Evaluation Schedule*, and the results of its work are most encouraging. Of 145 schedules submitted from 18 states in 1945, 47 were from communities participating for the first time. The expansion of *Health Practice Indices*, which shows the range of accomplishments in various fields of community health service, also indicates the spread of the Reporting Area idea. The second edition, published in 1944, contained data concerning 178 communities; the third, published in the fall of 1945, charts the accomplishments of 243.

Under the auspices of the Subcommittee on Local Health Units, Haven Emerson, M.D., Chairman, and published for the Association by the Commonwealth Fund, *Local Health Units for the Nation* appeared in August, and within a month was in its second printing. This is the result of a two year study financed by the Fund. Its recommendations would create 1,197 local health units providing minimum essential health services to all the people at a cost of $1.00 per capita,

replacing 18,000 local administrative units now in operation and under which 40,000,000 persons are still without basic health protection. There appears to be a real demand for further exploration and promotion of the principles suggested by the subcommittee. Not only have varied national magazines such as the *American Journal of Public Health, The American City, State Government,* and the *Public Administration Review* solicited articles, but the report has also been reviewed in such journals as that of the American Medical Association, the *Public Policy Digest* of the National Planning Association, *Public Health Reports,* and *New York Medicine.* A number of the state health departments, notably California and Colorado, have prepared and published full digests of the report, both as to its general principles and their application to the respective state situations.

A follow-up institute of state health officers and directors of local health administration is planned during the coming year to exchange information, develop activity, and influence professional and public opinion in favor of early completion of the total coverage of the nation with full-time local health units.

The work of the Subcommittee on Evaluation of Administrative Practices has been confined this year to the Study Committee on Whooping Cough, under which extensive studies of antigen have been conducted by Dr. Pearl Kendrick, and to the reorganization of the Study Committee on Goitre. The death of the Secretary of the latter, Dr. Fred B. Miner, is recorded with regret. His successor is Dr. O. P. Kimball. Reports from both Study Committees are looked for in 1946.

The Subcommittee on Accident Prevention, Donald B. Armstrong, M.D., Chairman, has developed a plan for the integration of home safety activities in programs of state and local health departments which was published in the *Journal* in March. In the same issue there was published an article under Dr. Armstrong's authorship entitled "Accident Prevention — An Essential Public Health Service."

The Committee on Administrative Practice is now 25 years old and its quarter-century anniversary was commemorated in the December *Journal* by the publication of a historical review of its accomplishments. The Executive Board salutes the committee, the many persons and agencies who made it possible, and the financial supporters without which nothing could have been done. During 1945, the Commonwealth Fund and the general Association budget have provided the sinews of war. Under a new plan which will go into effect in 1946, additional Association funds will be made available to the committee so that subcommittees in addition to that on State and Local Health Administration, whose activities will continue to be financed by the Commonwealth Fund, may have opportunity to meet and carry out ambitions it was not possible before to encourage. The American Drug Manufacturers Association has recently renewed the financing of the pertussis study through contributions from seven of its members.

Committee on Research and Standards

The Committee on Research and Standards, Kenneth F. Maxcy, M.D., Chairman, can point with pride to the activities of its subcommittees. Among these is the Subcommittee on Communicable Disease Control, of which Haven Emerson, M.D., is chairman, whose outstanding contribution has been the revision and extension of the report on the *Control of Communicable Diseases,* Sixth Edition. This was prepared in coöperation with representatives of the British Ministry of Health, and is official with the U. S. Public Health Service, U. S. Navy, has been approved

in principle by the Surgeon General of the Army and by the United Nations Relief and Rehabilitation Administration, and has been recommended for adoption as an official statement by the National Health Administration of China and by the Dominion Health Council of Canada. Seventeen state and local health departments have distributed it over their own imprints. Other state and territorial health departments, as well as South American countries, have made it official. About 100,000 copies have been printed in English. The Office of War Information has had it translated into Italian, French, and Thai, in a total of approximately 150,000 copies. The Pan American Sanitary Bureau has undertaken the translation into Spanish and Portuguese. A Chinese translation is also under way.

The work of the Subcommittee on Food Utensil Sanitation under the chairmanship of Walter D. Tiedeman has moved forward during the year because of the fortunate opportunity of developing relationships with the National Sanitation Foundation, which has agreed to support a new project, in cooperation with the subcommittee, for the evaluation of dishwashing devices, both in terms of physical aspects and chemical and bacteriological controls. It is appropriate that the coöperation of the National Sanitation Foundation in providing meetings of this group be properly acknowledged.

The Subcommittee on Morbidity Registration Statistics, Lowell J. Reed, Ph.D., Chairman, has advanced its purposes very rapidly through the meeting of an International Committee on Morbidity Registration, appointed by the United States Department of State, in fulfillment of a request made by the Mixed Commission in 1938. This committee has been meeting continuously over the past several weeks in Washington.

The Chairman of the new Subcommittee for the Evaluation of Methods to Control Air-borne Infections, James E. Perkins, M.D., approached his task by writing a review article for the *Journal* on the present situation. He has had two meetings of his subcommittee in 1945, with real progress reported.

The names of the members of this and other committees appointed since the April *Journal* went to press will be published early in 1946.

The Subcommittee on Hygiene of Housing, Professor C.-E. A. Winslow, Chairman, has rendered consultant service to the Memphis Health Department, the Philadelphia City Planning Commission, the St. Louis Health Department, and the Milwaukee Health Department. Part I of *An Appraisal Method for Measuring the Quality of Housing; A Yardstick for Health Officers, Housing Officials and Planners* was published in 1945 and has had gratifying acceptance. The National Association of Housing Officials has endorsed the method and is urging housing authorities to undertake surveys using its techniques. Parts II and III of the *Appraisal Method* are ready for the printer and will be published in 1946.

The Committee on Research and Standards has before it the reviewing responsibility, in advance of recommendation to the Governing Council, for promulgation as Association standards, of the Ninth Edition of *Standard Methods for the Examination of Water and Sewage*, and the Ninth Edition of *Standard Methods for the Examination of Dairy Products*.

Committee on Eligibility

The Committee on Eligibility has approved during the year over 1,000 applicants for membership, and at a meeting held in New York in October with representatives of all Sections of

the Association present it approved 121 applicants for Fellowship, 7 applicants for life membership, and the South Dakota Public Health Association as an affiliated society. The sudden death of the Chairman, Don W. Gudakunst, M.D., on January 20, 1946, is recorded with regret.

PUBLICATIONS

The Association has had a busy publication year. Books and reports have been mentioned in their proper places, but they are brought together here for the sake of the record.

An Appraisal Method for Measuring the Quality of Housing, Part I
Bibliography on Public Health and Allied Subjects (23rd edition)
Control of Communicable Diseases (6th edition)
Diagnostic Procedures and Reagents (2nd edition)
Employment Opportunities in Public Health
Health Practice Indices (3rd edition)
Local Health Units for the Nation (Published by the Commonwealth Fund)
Spanish Summary of 8th Edition of *Standard Methods for the Examination of Dairy Products*
Vital Statistics Directory (3rd edition)

In the distribution of the Association's publications, as well as those of other agencies in the public health field, the Book Service continues to be a vital part of the Association. It has just completed one of the most active years in its 24 year history, having had a larger volume of business in terms both of number of books and reports distributed and in dollar volume. The 23rd edition of the *Bibliography on Public Health and Allied Subjects* (17,000 copies) has just been printed and is being distributed to members and subscribers. The demand for the 8th edition of both Water Analysis and Milk Analysis has been so great that wartime editions in paper covers were necessary pending the new editions expected off the press late in 1946. *Control of Communicable Diseases* and *Local Health Units for the Nation* are among the best sellers month after month. But the Book Service also supplies members and others with free material, the *Bibliography* already mentioned, and reprints of *Journal* articles, especially the popular reports on professional qualifications of public health workers by the Committee on Professional Education.

MEMBERSHIP

It cannot be said too frequently that the strength of the Association lies in its membership and the voluntary service of its members to their professional society. Year after year we are able to report a new all-time membership record as qualified persons working in public health and in its related fields recognize what they can give to the Association and what the Association can give them. The membership at the end of 1945 exceeded that of any previous year by 353. On December 31, the total number of members was 9,408. Of these, 1,633 are Fellows. Included also are 26 Affiliated Societies, 36 Sustaining Members, of whom 5 were elected in 1945, and 16 Honorary Fellows. Sixty-nine applications for life membership are pending, and if these are favorably acted upon, the total number in this class will be 281. The membership figure of 9,408 includes also the 500 men and women in the military services whose dues were cancelled for the duration. It is gratifying to see how quickly these members reëstablish their affiliation on a paying basis as soon as they are released from service.

FINANCES

The Association income for 1945 has been nearly $225,000 and expenses have been approximately $210,000. Income from membership has been the highest in the Association's history and this is also true of the *American Journal of*

Public Health and the sales of Association publications.

ACKNOWLEDGMENTS

The Executive Board takes this opportunity to acknowledge with great appreciation grants from donors, including the Commonwealth Fund, for appropriations to the State Studies and to the Subcommittee on Local Health Units of the Committee on Administrative Practice, and to the Accreditation Project conducted by the Committee on Professional Education; the Milbank Memorial Fund, the National Tuberculosis Association, and the Field Foundation for grants to the Committee on Hygiene of Housing; the Albert B. and Mary Lasker Foundation for a grant for awards to be given by the Association; and to the Rockefeller Foundation for a grant for the work of the Subcommittee on Medical Care. Acknowledgment to Sustaining Members for continued support to the entire Association program is gratefully made.

There is no activity of the Association which is not of the membership, by the membership, and for the membership, and this Report would be incomplete if it did not pay tribute to the hundreds of persons whose thought, time, and hard work have contributed to the Association's progress this year. The Governing Council, the Executive Board, the Sections, the Standing and other Committees have had continuing responsibilities and therefore the widest opportunity to influence our policies and program. Many others have been called upon briefly for special service; still others, working alone and spontaneously, have done much to increase Association membership and otherwise extend the usefulness and prestige of the organization. The response from organized groups and individuals alike has been magnificent. This is the priceless ingredient of the atmosphere referred to at the beginning of this series of reflections. It can be depended upon as we face the known tasks of 1946 and those, now unforeseen, which will come our way.

Once more, as in years past, it is well to reiterate and to reëmphasize that little or none of this record of activity and accomplishment would have been possible without the untiring, intelligent, and sympathetic administration and leadership by the Executive Secretary and his staff.

ABEL WOLMAN, DR.ENG.,
Chairman

American Journal of Public Health
and THE NATION'S HEALTH

Official Monthly Publication of the American Public Health Association

Volume 36 — May, 1946 — Number 5

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GOVERNOR DEWEY'S HEALTH MESSAGE

ON March 4, Governor Thomas E. Dewey delivered to the Legislature of New York State a special message formulating a new and comprehensive state health program. The recommendations of this message have now been enacted into law, and should mark a new milestone in the history of American public health. We congratulate Dr. E. S. Godfrey, State Commissioner of Health, and Chairman of the informal committee which developed this excellent and far-reaching program, and his associates in planning, particularly Mr. Homer Folks.

Perhaps the most immediately significant proposal of the Governor's message is a major increase of grants for the upbuilding of local health departments. As in other North Atlantic States, New York has for thirty years attempted to stimulate the establishment of full-time county health units—but with very limited success; at present, only 6 such units are in existence, out of a total of 57 upstate counties. No state grants have previously been offered to the larger municipalities. The bill calls for state-aid reimbursement for sums expended by county health departments up to 75 per cent of the first $100,000 of the county budget and 50 per cent of expenditures above that figure. Furthermore, it provides for 50 per cent reimbursement for cities with a population of 50,000 or more. All in all, there is involved an appropriation of nearly three million dollars to New York City, nearly one million to other large cities of the state, and about a million and a half to the smaller communities. The inclusion of cities as recipients of state aid is an interesting new departure, which has perhaps special justification in the trend toward a flight of taxable capital from formal municipal limits to adjacent suburban areas.

In addition to these grants for public health services in general, Governor Dewey recommends new grants in a total of about six millions for "an all-out fight on tuberculosis with the objective of wiping out this dread disease in our state in twenty years or less." The state funds are to be used for an approximate 50 per cent aid in the care and treatment of tuberculosis, on a patient-day basis. As a condition of these grants, the "means test" as a condition for admission to approved tuberculosis hospitals would be entirely eliminated—"a tremendously

important psychological factor which will permit prompt hospitalization of patients, thus avoiding risk of infecting their families and others and also, by prompt treatment, saving countless lives."

A third extremely interesting proposal of the message is the establishment of an Interdepartmental Health Council to consist of the State Commissioners of Health, Social Welfare, Mental Hygiene, and Education and the chairman of the Health Preparedness Commission for joint planning in the areas of service where the jurisdictions of these officers may overlap. This is a timely recognition of the fact that public health, in its conventional sense, is not an isolated function but is intimately related at many points to more general problems of welfare and of education.

Passing over many minor and special phases of the proposed health program, there is one other provision which will be of special interest to our readers. This is a recommendation that the State Department of Health should establish a service for recruiting and training physicians and nurses for public health practice. Dr. Godfrey has already—with limited resources—pioneered along this line. An expansion of such training facilities would be of the greatest value, since the deliberations of our Committee on Professional Education have made it increasingly clear that the academic training provided in schools of public health should be supplemented by a definite period of supervised field training.[1]

In 1914, with the reorganization of its State Health Department, under the guidance of Hermann M. Biggs, New York State gave inspiring leadership to other states. The carrying out of the program now proposed should again place the Empire State in the forefront of public health advance.

REFERENCE

1. Horning, Benjamin G., M.D. Public Health Field Experience. *A.J.P.H.*, 36:135 (Feb.), 1946, and Editorial, Field Training for Public Health Personnel. *A.J.P.H.*, 36:178 (Feb.), 1946.

CASE FINDING IN THE CONTROL OF SYPHILIS

THE health officer who undertakes the control of syphilis discovers, very early, that he has but few tools with which to work and those of limited efficiency. Prophylaxis, case finding, treatment, and education are the only procedures theoretically available for his use.

Prophylaxis has had an excellent opportunity, in the Armed Forces, to prove its worth; its advocacy and use being tolerated because of the nature of the emergency. Under the most ideal conditions, however, it has had to be augmented by the repression of prostitution and other forms of sexual promiscuity, and by intensification of the civilian genitoinfectious-disease control program. There is reason to believe that the combination of procedures has very greatly retarded the spread of infection, but it has not kept the rates of infection from rising. In some theaters, as a matter of fact, they have been skyrocketing. It does not seem that there can be much hope for the control of syphilis by prophylaxis, in a disapproving and uncontrollable civilian population.

Case finding may be facilitated in several ways:

1. By public education to encourage suspicion of infection and prompt medical observation
2. By mass blood testing for case finding purposes
3. By routine blood testing and examination of all persons who come to medical attention, whether because of illness or for routine examination (as in pregnancy, for employments etc.) .
4. By direct epidemiological case finding, starting with a known case

To be effective in preventing the *spread* of infection, case finding must find cases while they are still infectious; and it must tend to find them early so as to reduce the period during which infection may be spread; otherwise no substantial progress will be made in prevention.

By these criteria, case finding by public education is, potentially, the most effective procedure of them all. If every person who indulges in a questionable sexual relationship, and who shortly develops a genital lesion or a rash, would seek competent medical attention at once, innumerable infections would be brought under control. Although such a program for public and professional education should be pushed with vigor and intelligence, it cannot be anticipated that either the public response or medical diagnostic competence will shortly become adequate to the solution of the problem of syphilis control. This form of case finding will have to be augmented, for a long time to come, by other case finding procedures.

Mass blood testing is an expensive, a cumbersome and, to a considerable degree, a "shotgun" procedure. It is, in general, incapable of such regular and frequent repetition as to assure the detection of new infections as they occur and while they are still communicable. In areas where syphilis is extremely prevalent, such mass testing may be of value, as shown in a recent campaign of the Savannah-Chatham County, Georgia, Health Department.[1] Here, mass testing for both syphilis and tuberculosis was carried on simultaneously at a cost of about fifty cents for syphilis testing for each person examined and with 18 per cent of all persons tested positive.

Routine blood testing is a highly selective form of mass blood testing, and it has the same shortcomings as a case finding procedure in early syphilis. To the extent that it is used in the examination of sick persons, and is accompanied by competent physical examination and reliable history taking, it may lead somewhat more often to the detection of early infections.

Case finding by direct epidemiologic investigation is the most immediately effective and the most continuously applicable method for discovering infectious early syphilis. Given a patient with an open early lesion, it is among that patient's sexual contacts, within the limits of the duration of the infection and its incubation period, that other early infections are most likely to be found. For all practical purposes, syphilis is spread by a single form of contact, sexual intercourse. Unless the patient has been highly promiscuous, he (or she) should be able to recall most of those contacts over a considerable period of time. The search for contacts may, therefore, be carried on according to a definite pattern, along definite lines, with considerable potential hope for success.

It is true that there are many obstacles to this form of case finding. The patient often refuses to admit that he has been as promiscuous as he actually has been. The long incubation period of the disease permits the source of the infection to continue to operate, often for weeks, before a case comes to light and prompts search for the source and for all of the infections which have occurred in the meantime. (In this connection, the epidemiological follow-up of cases of gonorrhea may be of special value in leading more promptly to discovery of persons of promiscuous habits, likely to have, and to spread, both infections.) The variable length of the incubation period, combined with the promiscuity of the patient, makes it impossible, in many cases, to predetermine who, among all of the contacts, *is* the source; hence many persons must be identified, found, and examined, in the hope that the source will be among them. The trail is often

crossed by unrelated infections which lead away in new directions, but which must be followed through. Some of these are time-wasting cold trails of late, noncommunicable syphilis. The very promiscuity which spreads syphilis leads into the blind alleys of anonymity, and the more generally promiscuous the population involved, the greater the number of dead ends. (Case finding among the reported contacts of members of the Armed Forces was nowhere excitingly productive.)

In spite of its shortcomings, both experience and logic dictate the use of this procedure in the control of syphilis. Competent epidemiologists, working in communities with reasonably stable populations, and in which prostitution has been repressed, have enjoyed a very considerable success with this method. It will become constantly more effective as public and professional education improves, and more infections come to attention earlier to provide more starting points for direct case finding.

Treatment cannot contribute substantially to the control of the spread of syphilis unless case finding, by one method or another, has first produced *early* infections to treat. Once an infectious case is found, moreover, treatment must be adequate to the permanent control of communicability, or the end result of the case finding will be *nil*. Thus, case holding, to the point of permanent noninfectiousness, is an essential part of the process and cannot be neglected.

There is disturbing evidence that the rapid cure of early syphilis leaves the patient open to prompt reinfection; which is of relatively rare occurrence under the older, slower treatment schemes. Promiscuous persons may become repeated sources of new infections and pose new problems in case finding. In fact, if case finding is not speeded up beyond all previous performance, a cured patient may even be reinfected by the original source of his infection. This probability is so great in gonococcal infections that every attempt is now made to treat both the patient and his contacts on the same day! It seems clear that direct case finding must be promoted, expanded, and speeded up to the limit of its possibilities, or more ground may be lost than gained by the use of the more promptly and more completely effective therapies.

Important as it is to use these inefficient tools for the control of syphilis to the limit of their capacities for accomplishment, it remains a fact that no communicable disease has ever been controlled by case finding and case treating procedures alone. Unless a disease can be prevented from occurring at all there is little hope for its ultimate permanent control. The Scandinavian countries have now discovered that a population may be so disturbed during times of stress as to undo all that had been accomplished by case finding and treatment under more normal conditions. The rates of infection with syphilis have returned during the war in those countries to their 1920 levels.[2]

It is *not* the responsibility of the health officer, alone, to teach people how to behave or why they should so behave. The job must not be left entirely to the health department. Society knows very well that good sexual morality and sexual responsibility are essential to the preservation of the family and, therefore, of society itself. This would still be true even though syphilis and gonorrhea had never existed. It is to the interest of society to develop good sex character for its own sake. Sex character will never be built out of lectures on the dangers of infection with genitoinfectious disease, nor on the risks of becoming mothers out of wedlock, nor by the blackout of all discussion of sex. It will be built only out of a deep sense of sexual responsibility, such as that which finds its fullest

expression in the family. Sexual promiscuity is sexual irresponsibility. The place of the family as the indispensable unit of society cannot be secure so long as sexual irresponsibility is the order of the day.

REFERENCES

1. Special Report. *Ven. Dis. Inform.*, 27:28 (Feb.), 1946.
2. Rapid Increase of Syphilis in Europe. *Epidemiol. Inform. Bull.*, UNRRA, Washington. 1:403–405 (June 30), 1945.

MILTON JOSEPH ROSENAU

THE year which has just passed has been marked by heavy losses in the higher ranks of our leaders in the field of public health. Ravenel, Leathers—and now Rosenau are gone. Our sense of loss is mitigated only by pride in the fact that we have—in our professional field—the achievements of such outstandingly distinguished leaders to chronicle.

Milton J. Rosenau, President-Elect of our Association, was born in Philadelphia in 1869 and died at Chapel Hill at the age of 77, on April 9, last.

Dr. Rosenau took his medical degree at the University of Pennsylvania in 1889, and pursued his postgraduate studies in Berlin, Paris, and Vienna. His professional life was divided into three successive phases.

From 1890 to 1909, he served in the United States Public Health Service and for the last ten years of that time was Director of the Hygienic Laboratory. This Laboratory, which is now the National Institute of Health, owes its impetus and its high scientific standards largely to "M. J." The writer of this editorial happened to be a member of an advisory group under the Chairmanship of W. H. Welch, and heard Dr. Welch tell the then Secretary of the Treasury that there was no research institution in the world which was making a greater total contribution to medical knowledge than this United States Public Health Service Laboratory. Rosenau's own research on the standardization of tetanus and diphtheria antitoxin, on vaccine virus, his contributions to our knowledge of anaphylaxis, his studies on milk sanitation and milk pasteurization, and on the epidemiology of typhoid fever and acute respiratory infections was of a high order.

In 1909 Rosenau began the second major phase of his career as Professor of Preventive Medicine and Hygiene at Harvard where he continued to serve until 1935. Between 1913 and 1922, he, with W. T. Sedgwick and G. C. Whipple, directed the pioneer Harvard-Technology School for Health Officers; and between 1922 and 1935 he was Professor of Epidemiology in the Harvard School of Public Health. For seven years (1914–1921) he served also as Chief of the Division of Biologic Laboratories of the Massachusetts State Board of Health.

While in Washington Rosenau had published a book on *Disinfection and Disinfectants* (1901). At Harvard he made an important contribution in a work on *The Milk Question* (1912). A year later, in 1913, came his *magnum opus, Preventive Medicine and Hygiene*, which has remained not only the standard textbook in this field but one of the best examples of an ideal textbook in any area related to medicine. Its last (6th) edition was published in 1935. Dr. Rosenau received the Gold Medal of American Medicine for Service to humanity in 1912 to 1913, and the Sedgwick Memorial Medal of our Association in 1934.

Here was what seemed a full and successful life. Dr. Rosenau retired from

Harvard at the age of 66. He seemed broken in health and suffered from tragic bereavements. Then a miracle happened; and instead of resting on his laurels, he began a third wholly new phase of his career. He recovered his health and took the post of Professor of Epidemiology at the University of North Carolina. In the delightful environment of Chapel Hill he built up a new School of Public Health, now recognized as one of the accredited schools of our Association, and the pioneer institution of its kind in the Southeast. He was constructively active to the very end of his long life. Less than three months ago he went to Puerto Rico to represent the A.P.H.A. at the meeting of the Puerto Rico Public Health Association; and, even after his first heart attack in March, he took an active part in the Institute for Health Officers at Chapel Hill, jointly sponsored by the University and the A.P.H.A.

Dr. Rosenau's youthful vigor of spirit and his soundness of judgment will always live on with us who knew him as an inspiration. His erect, military carriage and his sardonic comments emitted with a piercing glance from heavy-lidded eyes might have been forbidding in another man—and indeed no one took liberties with M. J. But his winning smile prevented any sting; and he was the soul of kindliness, always ready to go out of his way to help a pupil, a colleague, or a friend. Taking into account, not only his teaching for 35 years at two universities, but also his book on *Preventive Medicine and Hygiene* to which we all refer in time of need, it is probable that no single individual has ever taught so many public health workers so much as has M. J. Rosenau.

Fellowships in Health Education—1946

The U. S. Public Health Service has announced that fellowships for one year of graduate study in health education, leading to a master's degree in public health, are being offered to qualifying men and women by the U. S. Public Health Service through funds made available by the National Foundation for Infantile Paralysis.

Fellowships provide a year's study in public health education in an accredited school of public health, including an academic year of eight or nine months and three months of supervised field experience in community health education. A stipend of $100 a month for the entire period of academic and field training, plus tuition and travel expenses for field experience, is provided. Travel to and from the university at the beginning and end of training is not included.

Fellowships are effective for the academic year starting in the fall of 1946. Those eligible to apply include men and women in sound health between the ages of 22 and 40 who are citizens of the United States and who meet the entrance requirements of the School of Public Health of their choice. Application forms may be obtained from the Surgeon General, U. S. Public Health Service, Washington 25, D. C. Completed forms, accompanied by two recent photographs and official transcript of college credits and a 500 word statement of why applicant is interested in entering the field of health education must be in the hands of the Surgeon General by June 1, 1946. Veterans with necessary qualifications are encouraged to apply for fellowship. The subsistence allowance for veterans granted under the G.I. Bill of Rights will be supplemented by fellowship funds to bring the stipend to $100 a month.

Candidates must maintain a scholastic average of "B" to retain fellowship. Persons accepting fellowships will be expected to work in the field of health education for at least two years after completion of training. The Public Health Service and the National Foundation assume no responsibility for placing fellows in positions.

The Schools of Public Health authorized include those institutions in the United States accredited to give the master's degree in public health as announced in the March issue of the *American Journal of Public Health:* Columbia University, Harvard University, Johns Hopkins University, University of California, University of Michgan, University of Minnesota, University of North Carolina, and Yale University. Candidates will be permitted to express their choice of schools, and efforts will be made to grant first or second choice in so far as possible. The Service has announced that these fellowships are not available to employees of health departments because grant-in-aid funds are available for the training of such personnel.

American Public Health Association

COMMITTEES

1945–1946

IN the April, 1945, issue a complete list of Association Committees, including Section Councils and Representatives to Other Organizations and Committees was published.

The list which follows presents Standing Committees and their Subcommittees, Association Committees, and Representatives. It omits Section Councils because there have been no changes in personnel since the last list was published. It includes only changes in Section Committees. For a complete record of Section Councils and Section Committees for 1945–1946, the listings in the April, 1945, JOURNAL must be used in conjunction with the information provided here.

Committee on Professional Education

William P. Shepard, M.D., *Chairman*, 600 Stockton Street, San Francisco, Calif. (1947)
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(Use this information in conjunction with list published in April, 1945, issue)

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Standard Methods Committee on Examination of Milk and Milk Products

Associate Referee for:

Phosphatase Test — Professor L. H. Burgwald, Ohio State University, Columbus, Ohio, replaces J. H. Shrader, Ph.D.

Engineering Section

Committee on Water Supply

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Food and Nutrition Section

Committee on Standard Methods for the Microbiological Examination of Foods

Carl S. Pederson, Ph.D., added

Committee on Milk and Dairy Products

Ethel A. Martin, *Chairman,* National Dairy Council, 111 N. Canal Street, Chicago, Ill., replaces J. A. Keenan, Ph.D.

Committee on Foods (Except Milk)

Reginald C. Sherwood, Ph.D., replaces Paul S. Prickett, Ph.D.

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Halbert L. Dunn, M.D.

American Hospital Association (liaison representative)
Charles F. Wilinsky, M.D.

American Society of Civil Engineers and Federation of Sewage Works Associations—Joint Committee for Revision of the Report on Definition of Terms Used in Sewerage and Sewage Disposal Practice
Gordon M. Fair
H. A. Whittaker

American Society for Testing Materials—Committee on Soap
Carl R. Fellers, Ph.D.

American Standards Association

Building Code Correlating Committee (1945–1947)
J. Lloyd Barron, C.E.
W. Scott Johnson, alternate

Letter Symbols and Abbreviations for Science and Engineering
Earle B. Phelps

Safety Code for Dry Cleaning Establishments
H. H. Schrenk, Ph.D.
H. G. Dyktor, alternate

Safety Code for Exhaust Systems
Henry Field Smyth, M.D.

Sectional Committee on Allowable Concentrations of Toxic Dusts and Gases
J. J. Bloomfield

Sectional Committee on Bedding and Upholstery—Subcommittee on Sterilization
F. J. Maier

Sectional Committee on Building Code Requirements for Light and Ventilation
Rollo H. Britten
C.-E. A. Winslow, Dr.P.H.

Sectional Committee on Minimum Requirements for Plumbing and Standardization of Plumbing Equipment, A-40 and Subcommittee No. 1
M. Warren Cowles
Sol Pincus, C.E.

Sectional Committee on Places of Outdoor Assembly
J. Lloyd Barron, C.E.

Sectional Committee on School Lighting
Leonard Greenburg, M.D.
Joel I. Connolly, alternate

Sectional Committee on the Safety Code for Industrial Sanitation in Manufacturing Establishments
Leonard Greenburg, M.D.
Kenneth E. Markuson, M.D., alternate

Ventilation Code
Earle B. Phelps

Commission for the Study of Biological Stains
William D. Stovall, M.D.

Council on Rheumatic Fever
David Rutstein, M.D.
George M. Wheatley, M.D.

International Congress on Tropical Medicine and Malaria (Organization Committee)
Henry E. Meleney, M.D.

Joint Committee on Community Nursing Service of the National Organization for Public Health Nursing
Alfred L. Burgdorf, M.D.

Joint Committee on Definition of Terms Used in Water Works Practice (Joint with the American Society of Civil Engineers and the American Water Works Association)
Earle B. Phelps, *Chairman*
Sol Pincus, C.E.
Ralph E. Tarbett, C.E.

National Bureau of Standards—Standing Committee on Insect Wire Screening TS-3977
C. C. Kiker

National Conference for Coöperation in School Health Education
C. C. Wilson, M.D.

National Conference on Home Safety
Reginald M. Atwater, M.D.

National Conference on Uniform Traffic Accident Statistics
Robert J. Vane

National Congress of Parents and Teachers — Advisory Committee on Health and Summer Roundup of Children
Dorothy Mendenhall, M.D.

National Council on Rehabilitation
Hart E. Van Riper, M.D.

National Health Council
Reginald M. Atwater, M.D.
Louis I. Dublin, Ph.D.
Ernest L. Stebbins, M.D.

National Nutrition Advisory Committee
Robert H. Riley, M.D.

National Safety Council—Home Safety Advisory Committee
Edward S. Rogers, M.D.

National Committee on Films for Safety
Harry E. Kleinschmidt, M.D.

National Technological Civil Protection Committee
Abel Wolman, Dr.Eng.
Arthur E. Gorman, alternate

Credit Lines

MILWAUKEE LOOKS AT HOUSING

The Association's *Appraisal Method for Measuring the Quality of Housing* has served to dramatize existing slum conditions in Milwaukee and stimulate action regarding them. *The Architecural Forum* for December, 1945, under the title "Slum Slide Rule" says "City health inspectors, armed with new authority to condemn unfit dwellings, made a systematic room to room survey of the city's worst slum area, inspecting and rating by an elaborate point system worked out by the American Public Health Association, every sink, screen door and closet, bed and toilet. . . . First findings showed that spring housecleaning in Milwaukee's sixth ward would be a year-round job."

The same month *The Municipality*, a magazine of municipal affairs of the League of Wisconsin Municipalities, published *An Appraisal Method for Housing Conditions and Needs* by Dr. E. R. Krumbiegel, City Health Commissioner. He points out that the A.P.H.A. *Appraisal Method* is the only mechanism so far developed for an exact analysis of the extent and magnitude of "blighted" areas. He tells in detail the story of how the method is in use in Milwaukee and the way the new municipal ordinance operates in enforcing housing standards.

"Use of the housing appraisal method points the way to housing control on a systematic basis. It renders futile patchwork ordinance of enforcement unnecessary. Community action can proceed on the basis of typical conditions rather than by stressing a few of the worst or best examples of housing in a given area. It becomes possible to report objectively to the municipal administration on the state of housing in any problem area. The worst slum areas can be demarcated . . . . A definite long-range program can then be worked out for these selected areas . . . . There are numerous other practical applications of the appraisal method. It is believed that in Milwaukee its use will have effects of primary importance in determining public policy in the fields of housing and city planning."

THE SCHOOL HEALTH SECTION ANALYZES ITS NEEDS

As a new Section of the Association, the School Health Section has utilized the year just past, in which no Annual Meeting was held, to get acquainted with itself, as it were. A recent post card inquiry, answered by nearly 40 per cent of its more than 200 members, and analyzed by S. S. Lifson of the Section's Committee on Pupil Health Experience, reveals a variety of research projects relating to school health being carried on by Section members. Of the 50 studies reported, 25 concerned health service, while others related to health education or college curricula, to in-service training, or to community health education. "These research interests," says the author, "present evidence that those Section members engaged in school health work are not content to look at their responsibilities as routine."

In reply to a request for information as to help desired by members from the Section, the 82 replying listed 63 items on which they would like help. Of these, 27 were requests for information about school health matters—standards for personnel and facilities, definition of school health personnel functions, coöperative experience of departments of health and education, reports on special problems and other bibliographical

material, among them. The next most frequent item for which help was asked was on methods of health education. Others were on case finding methods. Others were on teacher training and in-service training for teachers. Significantly, one request was for action by the Section regarding salary schedules for school health personnel.

Mr. Lifson's detailed analysis of this material is being made available to the membership of the School Health Section.

RURAL HEALTH

Taking cognizance of the fact that "farmers want better health" and that the 57 million rural citizens in the United States do not have parity with urban dwellers in the quality of public health services available to them, the Department of Agriculture's Interbureau Committee on Post-War Problems presents a discussion of the main problems of rural health services and what can be done about them. This is a well illustrated and well printed pamphlet entitled "Better Health for Rural America: Plans for Action for Farm Communities" prepared by a group under the direction of Dr. F. D. Mott of the U. S. Public Health Service, and including Farm Security Administration, Department of Agriculture, Children's Bureau, and Social Security Board personnel.

It summarizes effectively the already known facts about the shortage of doctors, dentists, hospitals and other facilities in rural communities and the adverse effects of poor health services on the rural economy; analyzes what corrective measures have been taken, such as the Department of Agriculture's health programs, development of local health services, Blue Cross plans, and others; and outlines what has to be done now. The current objectives are five: (a) ease the payment of the medical bill, (b) provide adequate hospitals and health centers, (c) increase the number of doctors, dentists, and nurses in rural areas, (d) organize preventive health services and educate the people about health and disease, (e) elevate the scientific quality of rural medicine and related services. It should have a stimulating effect upon the development of rural health and medical care services.

DENTAL HYGIENISTS IN A DENTAL PROGRAM

Tic, the monthly organ of Ticonium, manufacturers of dental materials and prosthetics, in its issue of February, 1946, initiates "The Dental Hygienists' Corner," a page devoted to the work of the dental hygienist in all fields. Pointing out that dental patient traffic will continue heavy for some time to come, it suggests that the National Association of Dental Hygienists sell the dental hygienist to the dental profession and to the public interested in dental and public health economies. As a medium for this education it reserves a page to be filled by dental hygienists in their individual or association capacities, and pays a $25 war bond for each contribution in addition. *Tic* already has a "Dental Assistant's Corner."

The February issue also contains a complete reprint of Philip H. Austen's introduction to the 10th edition of *Harris's Principles and Practice of Dentistry*, published in 1879, a year after Austen's death. Its content is significant as an essay on education, particularly of the medical and dental professions.

PSYCHIATRY BELONGS IN GENERAL HOSPITALS

The March, 1946, *Hospital Survey News Letter* of the Commission on hospital Care, has an excellent brief review of the trends, dating back to 1729, that led toward broadening the base of general hospital service to give complete

care to all types of patients, including those suffering from mental illness. Among the mile posts mentioned are the Philadelphia and Bellevue almshouses established in 1729 and 1736 to provide custodial care for insane, the admission of mental patients to a special psychiatric division of New York Hospital in 1792, foundation of the American Psychiatric Association in 1844, the psychiatric division of Albany Hospital established in 1902 and, for 1946, "integration of psychiatric services in general hospitals considered practical and desirable."

HEALTH EDUCATION FOR MODERNS

Take-Off by Grace T. Hallock is health education for the air age, prepared for the National Tuberculosis Association. Addressed primarily to high school seniors, it bases its message on the concept of life as a series of take-off and landings—and the preparations necessary for them—the periodic examination, grooming, sportsmanship, fueling, relaxation, safety, responsibility, etc. Each subject is illustrated with an excellent photograph of its airplane counterpart imaginatively assembled and captioned. The pamphlet ends with 11 questions, a "yes" answer to which makes one ready for the "take-off." It is an excellent synthesis of writing, photography, and typography in the service of health.

A NEW SLANT ON GARDENING

The March *Michigan Public Health* is the "Garden Edition," devoted almost exclusively to the home garden, giving detailed instructions for kinds of fruits and vegetables to raise, the varieties suited to the Michigan climate, preparation of soil, time of planting, and amounts to be grown and stored. It is all interestingly written and illustrated, with facts checked by the State Agricultural School or the Department of Agriculture.

And why does a state health department's fancy turn to gardens in the spring? An article in the same issue headed: "Needed: A Cow and a Few Tomato Plants," says, "The urgent need for family gardens is sharply pointed up by recent surveys of foods eaten by school children in two Michigan counties. Children's eating habits showed serious deficiencies in tomatoes, green leafy and yellow vegetables, fruit, and milk." Another article reminds the reader that "world food shortages are critical." And finally in an article "Gardens for Health," Dr. DeKleine, the Health Commissioner says, "Yes! There is an abundance of wealth in gardening if we measure the dividends in physical, mental, and spiritual values."

This issue seems to Credit Lines a unique and imaginative tying up of parochial and world interests, and finding the recreative values in useful projects.

HEALTH PROJECTS IN LATIN AMERICA

The Food Supply Division of the Institute of Inter-American Affairs publishes a monthly report which should be of value to persons who are interested in Latin American health projects. The report is generously illustrated with native people and scenery and contains a good brief summary of health activities being carried on in various Central and South American countries.

The Health and Sanitation Division likewise issues a fortnightly newsletter giving sanitation news of the Americas.

UNITED NATIONS NEWS

The January, 1946, issue of *United Nation News* is Vol. 1, No. 1, published monthly by the Woodrow Wilson Foundation and devoted exclusively to news and reports about the meetings of the U.N., its functional agencies and other international organizations. Its aim is to meet the need for information in compact form about the many

international organizations in which Americans have assumed responsibility.

THE TOLL OF ACCIDENTS

The *United States Municipal News*, published weekly by the U. S. Conference of Mayors, on March 1 showed some National Safety Council figures comparing the number of war and accident casualties from Pearl Harbor to V-J Day. Killed in war were 261,608 persons, in home front accidents, 355,000; wounded in war, 651,911, and injured in home front accidents, 36,000,000. The figures, it is said, are presented to emphasize the importance of preventing accidents, not to imply that the fighting front is less dangerous than the home front.

SAYING IT WITH PICTURES

The January *News Letter* of the Kansas State Department of Health reproduces a cartoon used on school dental inspection forms, the gist of which is, "Your mouth is your constant servant; take good care of it." A good illustration of the effectiveness that can be achieved with simple line drawings.

ANNUAL REPORTS

Metropolitan Health Council (Columbus, Ohio)—A comprehensive summary of a year's doings of an active local health council. One section "A Look into 1946," quotes three of the recommendations of the Gunn-Platt report with the comment that they "should challenge the best thinking of all interested groups." There is also a short report of each of 9 committees. A directory of health services and another of clinics accompany the report.

Making Health Visible—Both the annual and the nine year report of the Cleveland Health Museum which effectively summarizes the first nine years of this unique museum. The development of extension services, of the interneship system, and of the expanding influence of the Museum are all illustrated verbally and pictorially. This report punctuates the end of an era for the Museum; in the spring of 1946 it will move into a new and enlarged building with facilities for broader usefulness.

TUBERCULOSIS HEALTH EDUCATION

The Tuberculosis Institute of Chicago and Cook County, which is a local organization of the National Tuberculosis Association, sends Credit Lines its recently prepared *Community Forum and Exhibit on Tuberculosis*. Inspired in part by the problem of the returning tuberculous veteran and the difficulty of keeping him under care, this pamphlet outlines a complete program of health education and a health exhibit, giving not only the philosophy behind the program and the needs which it is aimed to meet, but also outlines procedures to be followed in organizing the community, objectives to be met, methods to be employed, content of program, exhibit, and evaluation. All this is done, not by way of theory, but by describing the forum and exhibit and the continuing organization in Cook County under 9 subcommittees.

ALCOHOLIC A PUBLIC HEALTH PROBLEM

Two recent items indicate the growing awareness of the alcoholic as a public health problem. The first is a three day institute in chronic alcoholism held in February, 1946, at the University of Minnesota Center for Continuation Study. The faculty of 12 included 6 physicians, among them Dr. Haven Emerson. Others included E. M. Jellinek, Director of the Yale University School of Alcohol Studies, judges and probation officers. Among the topics discussed were the pharmacology and sociology of alcohol, the clinical and psychiatric manifestations of alcoholism, its legal aspects and its social treatment.

The second item is the February, 1946, *Timely Health Topics,* the Bulletin of the Fort Worth-Tarrant County Health Education Committee (Texas), which is devoted entirely to a discussion of alcohol, alcoholism and the alcoholic, and some of the plans for his rehabilitation.

BOSTON'S HEALTH UNITS

The expanding interest in health centers across the country will provide a welcome for the newly published review of Boston's Health Units, established from the income of the George Robert White Fund. This booklet describes the buildings and their program and gives the reader a comprehensive idea of the project now almost thirty years old.

Charles F. Wilinsky, M.D., the Deputy Commissioner of Health in charge of health units, and the person whose continued interest has made possible these outstanding health centers in Boston, points out the origin of the project with the opening of the Blossom Street Health Unit in 1916. "In the light of the present belief as to the importance of the health center as a focal and central point for the conduct of health and welfare work on a district level, and in view of the rapid expansion of this development, it may be safely assumed that the planned objectives of almost thirty years ago have in a marked degree been realized. Believing that the seven Health Units, built and equipped by the George Robert White Fund at a cost of approximately three million dollars, are of interest to public health and welfare leaders, it has been decided to bring up to date and to republish this booklet first printed a decade ago. We hope that this description of our health units, how they were established, and the activities carried on, will be of interest and value to its readers."

Public health planners are indebted to Boston for making this excellent report available. It is highly recommended reading.

25 YEARS OF PUBLIC HEALTH IN CHARLESTON, S. C.

The Charleston (S. C.) County Health Department has recently published a history of its first quarter of a century. Well printed on good paper and extensively illustrated with photographs and charts it is a meaningful record of achievement.

Actually this health department has a much longer history. Although the County Health Department is only 25 years old, Charleston City, whose health work was incorporated in the County Unit ten years ago, had a board of health as early as 1796.

The County Health Department was set up in 1920 following a Public Health Demonstration sponsored by the State Board of Health and the U. S. Public Health Service, and received early financial support from the Rockefeller Foundation. In 1926, the present Health Officer, Dr. Leon Banov, who had served the city department in various capacities since 1913, administered both the city and county units; in 1927 both health units were located under one roof, and in 1936, says the historical report, "It was realized that health problems did not stop at the city limits and that the City and County Health Departments had a common purpose—making a safer, cleaner, healthier, and happier county—and at a great financial saving to the citizens, the two departments merged into the Charleston County Health Department."

Charleston County won honorable mention in the National Health Conservation Contest in all the years between 1932 and 1936 and in 1939, winning first place in 1938.

HOME SAFETY—A CINCINNATI PROGRAM

Bleecker Marquette sends the follow-

ing story of a home safety educational program organized for the Public Health Federation of Cincinnati by its President, William S. Groom, who is using his experience as an advertising expert to serve as a volunteer health educator on the Federation staff.

"The subject of home accidents presents unusual problems, particularly with respect to a practical and effective means of reaching into all the homes with an educational program.

"In industry, employees are gathered together every working day where they can be readily subjected to a continuing prgram of accident prevention. Accident hazards can be scientifically studied and mechanical safeguards installed. Working habits of employees can be supervised and safety rules taught and enforced.

"In the case of traffic accidents, drivers of motor vehicles are registered. They can be taught and tested where state laws permit. They can be reached through motor clubs or through their employers if they drive commercial vehicles. They are also subject to supervision and enforcement through the medium of the traffic laws.

"No similar means exist for attacking the problem of accident hazards in the home, where physical conditions and human habits and attitudes cannot readily be studied, supervised or controlled.

"The problem of home accident prevention is made more difficult also because people generally recognize the inherent danger of accidents in industry and traffic but believe that "home is the safest place in the world."

"A further difficulty arises from the fact that elderly people are involved in a high percentage of all fatal accidents in homes and they are not easily influenced or changed in their habits and attitudes.

"Many communities have well organized programs for the control of industrial and traffic accidents, but in view of the greater difficulties in approach to the problem of home accidents it is not surprising that few if any communities have similarly well organized programs in this field.

"Believing it was high time that some organized effort be made to reduce the toll of home accidents in Cincinnati, the Red Cross and the Public Health Federation in coöperation with the Public Safety Department of the city have recently inaugurated an unusual type of educational program.

"In Cincinnati, the city firemen make regular and continuous inspections for fire hazards in homes, factories, business houses, and institutions. It requires about two years to inspect all homes in the city. When each home inspection is completed, the fireman issues a written report and order requesting the correction of fire hazards found.

"The new home accident program provides that the fireman will, at the same time, report on accident hazards in the home, suggest changes or improvements for their elimination, and leave one or two special leaflets prepared for the purpose by the Red Cross.

"One leaflet includes a check list of more than fifty different accident hazards commonly found in homes. It is punched to hang on a nail in the kitchen so that the housekeeper can check the home conditions and habits against it.

"The other leaflet covers the special problem of home accidents among older persons. The fireman asks if there are elderly persons living in the home, and if so he calls attention to the need of extra care and precaution in their behalf, and leaves this leaflet also.

"This program has been so recently started that results may not be expected for some time. Its sponsors believe that the general apathy toward the problem of home accidents cannot be readily overcome through educational measures of the usual kind. They be-

lieve that personal contacts and conversations in the homes are necessary and that some special means of impressing people, such as the fireman's uniform is desirable.

"When the fireman makes an actual inspection in the home and issues orders for the correction of a defective flue for example, it seems reasonable to assume that his advice and literature on home accidents, presented at the same time, will not be so easily disregarded.

"This method of approach offers the means of dramatizing and emphasizing the seriousness and importance of the subject. It seems reasonable to expect a better result by this means than would be possible from mailing the literature or leaving it on the doorstep.

"The program described does not replace other educational work carried on in newspapers, car and bus cards, over the radio, etc. What has been done before will be continued and the new project is in addition thereto."

Sample copies of the two pieces of literature now being used in the new program are available upon request to the Public Health Federation, 312 West 9th Street, Cincinnati 2, Ohio.

A RECORD FOR NEW MEMBERS

Beginning on page 561 of this *Journal* is a list of 236 applicants for membership in the American Public Health Association. This group of applicants breaks all previous records for new membership applications received in any one month.

For 70 per cent of these newcomers credit goes to a small group of Association members and Fellows who responded to the request for nominations, for 10 per cent to the affiliated societies and branches, and for 6 per cent to the membership application blank that is carried in the *Journal* each month. Also to the Public Health Education Section and the Public Health Nursing Section for attracting the largest number of these new members, 40 and 33 respectively, and to the Health Officers, Laboratory, and Engineering Sections which tied for third place with 26 members each.

Credit Lines takes off its hat to these members who have thoughtfully called to the attention of their colleagues the value of the *Journal* and other Association services.

WORTH ACQUIRING

A Good Food Ticket for You—A folder showing a train in bright green, orange, blue, and yellow carrying three daily meals of milk, fruit, meat, eggs, and all the things that make a good food ticket. Also space for the next appointment to child health conference. Division of Maternal and Child Health, Mississippi State Board of Health, Jackson, Miss.

As One Board Member to Another—A highly professional job of outlining a board member's responsibilities by Fern Mosle, who has never held a professional position with a health agency but has been a board member and is currently on the board of directors of the California Tuberculosis and Health Association. It has proved so popular that the supply is limited. Single copies can be furnished at *15 cents* each and unlimited permission to reprint is also granted. California Tuberculosis and Health Association, 45 Second Street, San Francisco 5, Calif.

When You Build or Remodel—Is an illustrated pamphlet giving safety standards for all aspects of home building, the site, entrance, structural factors, interior planning, storage, electrical installation, plumbing, heating, and fire protection. It is prefaced by the text, "It is a little recognized fact that each year more than 30,000 persons are killed in home accidents and more than 4,500,000 are hurt, crippled, or dis-

abled." Available from National Safety Council, 20 N. Wacker Drive, Chicago 6. The Council also has a bi-monthly *Home Safety Review* that can be had for *5 cents* a copy or *25 cents* a year.

Prevent Undulant Fever—A four page leaflet telling in the simplest terms what undulant fever is and how it can be prevented. Bureau of Health Education, Division of Health, Cleveland, Ohio.

Open Doors to Children: Extended School Services—Prepared by Margaret T. Hampel, Consultant on School Services, and Hazel Gabbard, Senior Specialist on Extended School Services of the U. S. Office of Education, this pamphlet "is about the activities of school-age children in centers providing supervised programs planned by teachers, parents, and children." It is a veritable storehouse of suggestions for the opening of manifold doors of interest to the child. Superintendent of Documents, Washington, D. C. *10 cents*.

Program Report, Good Breakfast Week—The Cereal Institute has made available the report of the activities of Good Breakfast Week, sponsored by the New York CDVO Consumer Services Division, in coöperation with 23 other civic and welfare groups. This has suggestions for educational materials, breakfast menus, Department of Market broadcasts. Available from Cereal Institute, Inc., 135 South LaSalle Street, Chicago 3.

Challenge to Community Action—This pamphlet is the leading item in a package prepared by the Social Protection Division of the Federal Security Agency in its educational program against the further increase of venereal disease infections. It stresses community responsibility and gives practical information on community weapons and making community protection work. Included in the packet also are *Recommendations on Standards for Detention of Juveniles and Adults, Techniques of Law Enforcement in the Use of Policewomen with Special Reference to Social Protection* and a leaflet, *Danger Ahead*. Available from Social Protection Division, Office of Community War Services, Federal Security Agency, Social Security Building, Washington 25, D. C.

How to Use a Motion Picture—No. 1 in a "How to Do It Series" of the National Council for Social Studies, 1201-16th Street, N.W., Washington 6, D.C. Others in the series include: "How to Use a Textbook;" "How to Use Local History;" "How to Make a Bulletin Board Effective." *10 cents* per copy.

BOOKS AND REPORTS

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted. All books reviewed in these columns may be purchased through the Book Service.

The Effect of Bombing on Health and Medical Care in Germany—*By Morale Division, U. S. Strategic Bombing Survey Medical Branch Report. Washington, D. C.: War Department,* 1945. 388 pp.

Here is a significant report, the first of its kind, which will answer at least some of the many questions Americans in every walk of life were asking as wave after wave of bombers reduced German cities to rubble.

For the public health worker, the physician, the hospital administrator, it is prophetic of what would be facing this country had the gods of war not smiled favorably on us.

Considering the time permitted and difficulties encountered in obtaining and assembling these data, the report is surprisingly inclusive and has the ring of authenticity. For approximately five months and following closely on the heels of Allied liberation troops, thirteen American scientists in medicine and health, seven of whom had studied in German and Austrian universities, worked diligently in carrying out their special assignment.

The book embodies collaborations of on-the-spot analyses of localities chosen on the basis of severity of bombing to the size of the city; on captured enemy records in 24 representative German cities; and by interrogation of German officials and physicians at every level.

Surprising, if not astounding, information is interestingly presented. Examples of pertinent facts divulged: civilians killed in proportion to bombs dropped; prevalent causes of death; why there were no major epidemics in a battered Germany; medical care afforded civilians; rôle the national diet played in defeating the " master race "; pharmaceutical highlights; psychiatric disorders among regimented civilians; how a large, well organized national and local public health service, aided by the inherent devotion to personal hygiene—and lady luck—helped maintain German health.

The statistical material is well prepared. The report as a whole is studied, conservative, and enlightening. Read it for information or interest.

COURTNEY SMITH

A Study of Nursing School Health Practices and a Recommended Health Program for Student Nurses—*By Burnet M. Davis, Robert H. Felix, Charlotte Silverman and Marion E. Altenderfer. Washington, D. C.: U. S. Govt. Ptg. Office,* 1945. 22 pp. Price, $.10.

One of the many beneficial results of the establishment of the wartime Cadet Nurse Corps was an investigation of student health programs in schools of nursing, undertaken at the request of the Surgeon General of the U. S. Public Health Service. The resulting recommendations are now available in pamphlet form and outline clearly the school's responsibility for the health and healthful environment of students. The routine for x-ray examinations is especially interesting and important in view of the high incidence of tuberculosis among student nurses and young graduates: positive tuberculin reactors should be x-rayed on entrance, at 6 month intervals, and negative reactors

annually or whenever they become tuberculin-positive. A terminal examination is recommended on graduation. A yearly x-ray examination is recommended for all graduates. Routine x-ray examinations of all hospital admissions is advised as another protection to nurses.

That these as well as the other recommendations are greatly needed was revealed by the findings. In the case of chest x-ray routine, for example, out of 90 schools, only 41 took chest x-ray of all students on admission! Sixty-eight schools repeated chest x-rays annually, five every 6 months and one three times a year. One school x-rayed only selected cases every year!

Public health nursing agencies accepting student nurses for field experience should be familiar with this survey and its recommendations.

DOROTHY DEMING

White Versus Brown Flour—*By F. L. Dunlap, Sc.D. Newark, N. J.: Wallace & Tiernan Co., Inc.,* 1945. 272 pp.

The twelve chapters take the reader from "The Grist Great Grandad Ground" in Chapter 1, through Chapters 5 and 6 "Nutritional Characteristics of White and Brown Flour" to Chapter 12 "The Amino Acids in Nutrition." There are also chapters on the phytic acid and enrichment problems. In the foreword of the book C. K. Michener states:

"Coming into first prominence with the fiery brown bread crusading of the Rev. Sylvester Graham, the white versus whole wheat flour controversy has troubled the bread-eating world for about 100 years. The contention has not yet come to an end, even in this country where enriched white flour has received scientific and public acceptance. Wartime necessities unassociated with nutrition have delayed a decision in other countries, notably Great Britain, which was first to propose bread enrichment, or fortification, with vitamins and minerals. Dr. Dunlap's work, in consequence, is by no means outdated or outdistanced by events. He deals with what may continue for some time longer to be a debatable question."

The monograph is based on a survey of the literature (336 references); no new data are presented. While leaning to the "white flour" side of the argument, Dr. Dunlap has kept the work free from contention and argument. The entire nutritional aspects of wheat milling and flour are ably stated and clearly analyzed.

The evidence presented on phytic acid and the continued use of high extraction flours in Europe points clearly to restricted calcium and iron utilization in brown flours. Enrichment of white flour with minerals and vitamins is considered to be a sound practice.

In spite of a 50 year old educational campaign in favor of whole wheat bread, and free-choice purchases, the American public still overwhelmingly prefers white bread. In the words of the author—"All too long, wheat flour has been emphasized for its energy producing qualities. Wheat flour can and does contribute in no inconsiderate fashion to our protein requirements."

CARL R. FELLERS

Life and Health—*By Charles C. Wilson, M.D., John L. Bracken, M.A., and John C. Almack, Ph.D. New York: Bobbs-Merrill,* 1945. 547 pp. Price, $2.12.

This book has been prepared for use of high school students in health education courses. Health problems are approached from the students' point of view and related to their everyday interests and experiences. The text is written in a frank and straightforward style, and many attractive illustrations are used to supplement it. The ma-

terial has been carefully selected with attention focused on the maintenance of a healthy personality.

The twenty-four chapters in the book are organized into eight parts. It will be noted that the problems discussed are of particular significance today. They are: Your Way of Life, Nutrition for Health and Fitness, Vigor and Strength, As Others See You, You're in Command, Man Against Disease, Modern Safety and First Aid, and Together in Health.

The authors have taken great care in presenting facts that are accurate and up-to-date. This book should be very useful in high school health education programs. VIVIAN V. DRENCKHAHN

A Future for Preventive Medicine—*By Edward J. Stieglitz, M.D., F.A.C.P. New York: Commonwealth Fund*, 1945. 77 pp. Price, $1.00.

This book brings into concrete focus the more recent thinking in the field of preventive medicine. The author properly points out that we must continue our work in the conquest of epidemic diseases, but we must also increasingly concern ourselves with the noninfective diseases of senescence. These are taking an increasing toll of life and ill health as our population grows gradually older. Even though our knowledge of the degenerative diseases is still meager, enough is already known, if applied, to mitigate many of the diseases of old age which are not preventable.

Stieglitz emphasizes that health is a privilege and not a right; that the greatest possible well-being for the individual is only obtainable by personal diagnostic study. As each person necessarily presents specific, individual problems, the mass approach will not suffice. With this concept one certainly cannot quarrel, nor with the idea that prolonged and effective education to seek such care is necessary. The author, however, dismisses the element of cost in altogether too few words. With a large segment of our population normally unable to pay even for curative care, certainly the question of how people can pay for such personalized supervision as we all feel is necessary merits more consideration than he gives it. Until this question can be answered more satisfactorily, much that the author advocates can never be put into practice for the great majority of people.

The book is distinctly worth reading by everyone in the field of public health. It gives us a glimpse into some of the problems of the future and the coming changes in emphasis in our health programs. It will help us to orient our thinking toward the problems to which we have given little thought. If we are to meet the challenge of the future, we must place more and more emphasis on the preventive aspects of noninfectious diseases in an ageing population. LLOYD FLORIO

Tuberculosis Hospital. 200 Bed Capacity—*Plans prepared under the direction of Committee on Sanatorium Planning and Construction. New York: American Trudeau Society: National Tuberculosis Association*, 1945. 10 pp. Price, $2.50. Copies may be purchased through the National Tuberculosis Association.

This 11 x 15 inch booklet consists of an elevation of the hospital, a plot plan, three pages of text and five of floor plans drawn to scale. A discussion of the development of sanatoria indicates the basis for a vertical type of hospital after which departmental requirements are fully reviewed since these form the logical basis for designing a physical plant. The booklet will be of value as a starting point in planning a hospital of this type, but very careful consideration of the details and of the space distribution and modifica-

tion to meet a specific situation will be required. There are many points needing further study—for example (1) there is no Record Room, (2) the fluoroscope adjacent to the operating room is not available for stretcher patients. N. STANLEY LINCOLN

The Chemistry and Technology of Food and Food Products—*Edited by Morris B. Jacobs, Ph.D. Vol. I, XV, 951 pp. Vol. II, XX, 890 pp. New York: Interscience Publishers, Inc.*, 1944. Price, $19.00.

These two monumental volumes contain forty-eight chapters, each written by a competent authority. The book is not an up-to-date replica of König's classic compilation, neither does it give the food chemist recent up-to-date and concise methods of analysis. A person thoroughly familiar with any one of the many different subjects so well presented may find that the specific chapter in question is slightly superficial and lacking in detail, yet if he peruses the other chapters upon subjects with which he is not an expert, he will find each one extremely interesting as well as instructive and accurate.

The references to the literature quoted show careful study of recent publications in the science journals. The chapter on vitamins, for example, gives references to thirty-eight publications between 1931 and 1942, the median year being 1939. This vitamin chapter is worthy of extensive study, since it contains the structural formula, physical characteristics, statements relative to stability and biological activity of fourteen groups.

For those interested in the physical aspects of food, a study of the chapter on Kinetics of Enzyme Reaction is recommended, and there are but few who cannot absorb considerable valuable information from the forty-eight page chapter upon Amino Acids and Proteins.

Among the unusually interesting chapters upon food technology are those pertaining to cereal grains, baking, alcoholic beverages, meat products and fish. The chapter on fish, written by one thoroughly familiar with the subject, carries a picture of the fishing fleet at Gloucester, Mass., which is so natural that one instinctively smells trimethylamine as soon as the page is turned.

All persons engaged in technological work pertaining to foods will enjoy the book and most certainly can absorb something of advantage in their business. Each volume is well indexed, the press work is excellent as are also the paper and the binding.

HERMANN C. LYTHGOE

Community Organization for Social Welfare—*By Wayne McMillen. Chicago: University of Chicago Press*, 1945. 658 pp. Price, $4.75.

This well organized and well documented discussion for social welfare is primarily for teachers and for beginners in social welfare work. Mr. McMillen has rendered a valuable service in bringing together a vast amount of data and a thoughtful interpretation based on his own broad experience in this field. The volume will be of great value, to all engaged in any form of community organization activities.

Mr. McMillen uses two approaches to the problem: Procedures used by practitioners in this field and knowledge of the psychology of groups.

The author definitely rejects the doctrine of determinism. He believes firmly that trends can be directed and social conditions modified. He sees the aim of the community organization process as bringing about and maintaining more effective adjustment between social welfare resources and social welfare needs. This involves discovery of needs and elimination and prevention of social needs and disabilities as far

as possible. A sound social structure and such preventive measures should mean fewer people needing individual social services.

If references were made to the social unit experiment in Cincinnati conducted back in 1915 to 1918, or to the plan of organization in Chicago's Back of the Yards District, they escaped my notice. Community organization for health is not discussed.

The last chapter, "The Decades Ahead," gives an appalling pictrue of social services in 1894 as described by Amos Warner. Perhaps we need to compare what is now with what existed even so recently in the past to realize that we have made substantial progress in spite of our present-day lacks. Mr. McMillen gives Community Chests and Councils and social agencies some of the credit for the improvements that have taken place.

BLEECKER MARQUETTE

Hygiene—*By J. R. Currie, M.D., and A. G. Mearns, M.D. (2nd ed.) Baltimore: Williams & Wilkins,* 1945. 432 pp., illus. Price, $6.00.

The authors have addressed this book to students of medicine, practitioners, public health officials and social workers as a volume to provide orientation and familiarity with the fields of public health work.

As members of the public health faculty at the University of Glasgow, Scotland, they can speak with authority in presenting the views accepted in Great Britain. Accordingly, their book is of particular interest to people in the Americas who wish to have advance knowledge of opinions and practice before going to England, or who may wish to make comparisons with procedures to which they are accustomed at home.

Both American and English research literature has been well utilized, but reference to official legislation and sanitary codes is limited to those of the United Kingdom. For this reason the book can be recommended only as supplementary reading for students and sanitarians in America and Canada.

An excellent opening chapter on Inheritance provides good background at the beginning, and the chapters on Maternity and Child Welfare, Mental Hygiene, Social Insurance, and on Housing clearly present the strong side of British public health philosophy. The two chapters on Community Diseases and Infestation, however, seem very poorly organized, consuming one-fourth of the book in descriptions of symptoms and etiology of unrelated diseases listed alphabetically. Regrouping by methods of control and leaving detailed descriptions to the specialized texts on parasitology and medical diagnosis, would have saved space for more complete treatment of the chapters on environmental sanitation and public health administration.

Ventilation, "warning" (good term), and lighting are considered very superficially with no mention of the underlying physiological principles. Of the discussion on food sanitation, Americans would feel that too much faith is placed in meat inspection, that the case for pasteurization is urged very mildly, and that restaurant sanitation is ignored. It may be that the reason for this bias, which is typical of European countries, lies in the fact that it is so difficult to change business and living habits based on centuries of custom. Officials there tend to look on community health education, as Americans know it, as a very up-hill job, and this fact shows up clearly in the text.

PHILIP E. NELBACH

Jobs and the Man—*By Luther E. Woodward, Ph.D., and Thomas A. C. Rennie, M.D. Springfield, Ill.: Thomas,* 1945. 132 pp. Price, $2.00.

Published at a critical time when

many millions of men and women return to civilian life and seek peacetime jobs, this little volume attempts to reach chiefly employers, supervisors, interviewers, counselors, foremen, and shop stewards in industry and smaller business "to deepen their understanding and consistently to improve their techniques of handling their fellow men."

The importance of emotional balance for satisfactory work performance and the fact that placement in the right job is almost essential for emotional balance is the leading motive of the book. Five out of seven chapters deal specifically with the problems of returning veterans whose speedy adjustment is essential because ". . . at best the public's remembrance of its heroes will be relatively short." Illustrated by impressive case histories, the chief differences between military and civilian life and the difficulties of adjustment to home-life, old and new working conditions are explained. An important part of the discussion is devoted to the veteran "who comes back nervous." The signs, symptoms, and mechanism of psychoneurosis as a "respectable disorder" and the desirable attitude toward men thus affected are clearly outlined. Practical hints on interviewing and counseling should be a valuable aid for those untrained in these techniques. As a long-term view, the need for preventive mental hygiene programs on a large scale in industry is emphasized. FRANZISKA W. RACKER

Group Health Insurance and Sickness Benefit Plans in Collective Bargaining—*By Helen Baker and Dorothy Dahl. Princeton, N. J.: Princeton University Press,* 1945. 89 pp. Price, $1.50.

This "survey of the impact of collective bargaining on provisions for sickness benefits for industrial employees . . . was restricted to programs which provide, as a central core, weekly cash benefits for temporary disability." Information was obtained about "more than 44 sick benefit programs established through agreements with employer associations, and more than 230 included in agreements with individual companies."

The authors outline in considerable detail plans developed through collective bargaining and the major policies and problems involved. The viewpoints of unions, employers, and insurance carriers are quoted, and the advantages and disadvantages of union and employer administration of benefits are pointed out.

This inclusion of sick benefits in union contracts has been almost entirely a wartime development. Its post-war growth is likely to be affected by developments in health insurance legislation.

Everyone interested in health insurance plans will find the first hand information contained in this report of value for the light it throws upon an important social experiment.

MARGARET LOVELL PLUMLEY

BOOKS RECEIVED

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

AIR POLLUTION IN NEW YORK CITY. Report of New York City Air Pollution Survey, 1936–1937. By Arthur C. Stern, M.E., Leon Buchbinder, Ph.D., Jac Siegel, B.S., and others. New York: Department of Health, 1945. 28 pp.

BOSTON'S HEALTH UNITS. Established from the Income of the George Robert White Fund, 1924–1944. Boston: Department of Health, 1945. 50 pp.

A COMMUNITY PROJECT REPORT ON THE BETTER BREAKFAST CAMPAIGN OF BRIDGEPORT, CONNECTICUT. Sponsored by the Community Nutrition Committee of the Bridgeport Community Chest. Bridgeport: Community Nutrition Committee, 1946. 143 pp.

THE CRIME OF IMPRISONMENT. By George Bernard Shaw. New York: Philosophical Library, 1946. 125 pp. Price, $2.00.

DOCTORS, DRUGS AND STEEL. The Story of Medicine's Battle Against Death. By Edward Podolsky, M.D. New York: Bernard Ackerman, 1946. 384 pp. 20 illus. Price, $3.75.

ETHICS FOR MODERN NURSES. Professional Adjustments 1. By Katharine J. Densford, R.N., and Millard S. Everett, Ph.D. Philadelphia: Saunders, 1946. 260 pp. Price, $1.75.

THE EXECUTIVE IN ACTION. By Marshall E. Dimook. New York: Harper, 1945. Price, $3.00.

FACTS ABOUT CHILD HEALTH. U. S. Department of Labor, Children's Bureau. Washington, D. C. Govt. Ptg. Office, 1946, 31 pp. Price, $.10.

FLUORINE IN UNITED STATES WATER SUPPLIES. By Anastasia Van Burkalow. Reprinted from the *Geographical Review*, Vol. XXXVI, No. 2, 1946. New York: American Geographical Society, 1946. 16 pp.

FOOD AND NUTRITION. Prepared under direction of Division of Elementary Education. State Department of Education. Sacramento: State Department of Education, 1945. 160 pp.

HEALTHFUL HOUSING FOR THE TERRITORY OF HAWAII. Recommendations of the Subcommittee on Healthful Housing, Committee on Sanitation. Honolulu: Chamber of Commerce, 1946. 29 pp.

HOW TO KEEP YOUR FAMILY HEALTHY. A Family Guide to Better Health. Compiled by the Editors of *Look*. New York: Franklin Watts, Inc., 1946. 95 pp. Price, $1.00.

LIFE, I SALUTE YOU. By Boris Kader. Cambridge: Sci-Art Publishers, 1945. 368 pp. Price, $3.00.

MANUAL FOR WATER PLANT OPERATORS. By A. A. Hirsch. Brooklyn: Chemical Publishing Co., 1945. 368 pp. Price, $6.50.

MEDICINE IN INDUSTRY. By Bernhard J. Stern, Ph.D. New York: Commonwealth Fund, 1946. 209 pp. Price, $1.50.

NOMENCLATURE OF PATHOGENIC AND PARASITIC ORGANISMS. Hartford: State Department of Health, 1945. 66 pp. Free from State Dept. of Health, Hartford, Conn.

NURSING AND NURSING EDUCATION. By Agnes Gelinas, R.N. New York: Commonwealth Fund, 1946. 72 pp. Price, $1.00.

NURSING IN COMMERCE AND INDUSTRY. By Bethel J. McGrath, R.N. New York: Commonwealth Fund, 1946. 356 pp. Price, $3.00.

PHYSICIANS' AND DENTISTS' ASSISTANTS. The Outlook for Women in Occupations in the Medical and Other Health Services. Women's Bureau, U. S. Department of Labor. Washington, D. C.: Govt. Ptg. Office, 1946. Bulletin 203, No. 11. 15 pp. Price, $.10.

PREVENTION, FIRST AID AND EMERGENCIES. By Lyla M. Olson, R.N. Philadelphia: Saunders, 1946. 591 pp. 173 illus. Price, $3.00.

THE PROGRESS OF MEDICAL GEOGRAPHY. By Richard Upjohn Light. A Proposed Atlas of Diseases. By J. K. Wright. Reprinted from the *Geographical Review*, Vol. XXXIV, No. 4, 1944. New York: American Geographical Society, 1946. 18 pp.

PSYCHOANALYTIC THERAPY. Principles and Application. By Franz Alexander, M.D., and Thomas Morton French, M.D. New York: Ronald Press, 1946. 353 pp. Price, $5.00.

PUBLIC HEALTH NURSING IN CANADA. Principles and Practice. By Florence H. M. Emory. Toronto: Macmillan, 1945. 554 pp. Price, $3.00.

REHABILITATION AT LAKE TOMAHAWK STATE

CAMP. A History. By Harold Holand. New York: National Tuberculosis Association, 1945. 46 pp.

REPORT OF THE FIRST SESSION OF THE CONFERENCE HELD AT THE CITY OF QUEBEC, CANADA, OCTOBER 16 TO NOVEMBER 1, 1945. Food and Agriculture Organization of the United Nations. Washington, D. C.: Food and Agriculture Organization of the United Nations, 1946. 89 pp.

A TEXTBOOK OF BACTERIOLOGY AND IMMUNOLOGY. By Joseph M. Dougherty, Ph.D., and Anthony J. Lamberti, M.S. St. Louis: Mosby, 1946. 360 pp. 102 illus. Price, $4.50.

THIRTY-THIRD ANNUAL REPORT OF THE SECRETARY OF LABOR. For the Fiscal Year Ended June 30, 1945. Washington, D. C.: Govt. Ptg. Office, 1945. 31 pp. Price, $.10.

TUBERCULOSIS REFERENCE STATISTICAL YEARBOOK FOR 1944. With comparative summaries for 1943, and five-year period 1940–1944. New York: N. Y. Tuberculosis and Health Assn., 1945. 40 pp. Free from publisher, 386 Fourth Avenue, New York, N. Y.

UROLOGICAL NURSING. By David M. Davis, M.D. 4th ed. Philadelphia: Saunders, 1946. 212 pp. 86 illus. Price, $2.25.

UNITED STATES MARITIME SERVICE HOSPITAL CORPS SCHOOL MANUAL. Washington, D. C.: Govt. Ptg. Office, 1946. 509 pp.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Best Possible Community Health Services—In Illinois, the State Medical Society gives a hearty shove to the progressing state coverage with county health departments. Though some hypersuspicious local doctors may fear the growing number of county units as just so much more "state medicine," their journal assures them that public health and socialized medicine are never synonymous.

AXON. County Health Departments. Illinois Med. J. 89:1 (Jan.), 1946.

That Tired Word: Coöperation!—Whenever educators state the objectives of public schooling they put health at the head of the list. That this will be not just a "tinkling cymbal," Wayne County, Michigan, worked out a coöperative venture between the schools and the health department. A little of what is being done is told here.

BRAKE, C. E. School Health: Whose Job Is It? Pub. Health Nurs. 32, 2:66 (Feb.), 1946.

From Stoke-On-Trent—Elementary and secondary school chlidren, 1,620 in all, were divided into two equal groups; one received supplementary vitamins, the other placebos. The vitamin supplement had no consistent effect on growth, strength, endurance, fatigue, incidence or severity of clinical conditions, hearing or absenteeism from school. As the children had an average ascorbic acid intake well below our N. R. C.'s recommended amounts, their generally good nutrition and failure of the supplements to cause any improvements makes these British scientists wonder about a lot of things.

BRANSBY, E. R., *et al.* Effect of a Daily Vitamin Supplement on the Health and Development of Children. Brit. M. J. 4440, 193 (Feb. 9), 1946.

I Am in This Fellow's Corner—It seems we have been scared into believing that a glass of raw milk is an invitation to the hospital. Brucellosis, gastroenteritis, *et al.*, are taking the villain's places once held by tuberculosis and typhoid fever. John Q. Publico is told by those who should know better, or by those who don't

care to know better, that raw milk is *always* dangerous and pasteurized milk is *always* safe. Neither of these statements is true, says this professor who takes up the cudgels again for certified milk. He knocks heads right and left.

BROWN, J. H. Why Certified Milk? Am. J. M. Sc. 211, 2:144 (Feb.), 1946.

Like the Poor: Always With Us—In some region of the United States, poliomyelitis is epidemic nearly every year. High incidence usually extends over a two year period. In a house-to-house canvass, it was found that 5.7 per 1,000 living children 15–19 years old had had a history of polio at some time. This is but a small sample of the statistical gold in the hills of this study.

COLLINS, S. D. The Incidence of Poliomyelitis and Its Crippling Effects, as Recorded in Family Surveys. Pub. Health Rep. 61, 10:327 (Mar. 8), 1946.

The Ever-Waiting Staphylococcus—They called it "pineapple trifle" but never was dessert so hideously misnamed. In a Canadian restaurant—well above the average in sanitary condition and practices—the cook made a pudding of left-over cake, cornstarch and what-not, then allowed it to incubate for 18 hours at room temperature. You know the rest!

DOYLE, H. S. An Outbreak of Food Poisoning in Prince Albert, Saskatchewan. Canad. Pub. Health J. 37, 2:65 (Feb.), 1946.

Thirteen Years of X-Raying—One in every four New Yorkers has already had his chest x-ray picture taken, and the proportion increases annually. How this huge job was done and what it means to present-day administrative practices constitutes a most useful history.

EDWARDS, H. R. The X-Ray and Public Health. New York State J. Med. 46, 5:408 (Mar. 1), 1946.

Thus Spake Zarathustra—"Better know nothing than half-know many things." I had assumed it was all settled that equine encephalitis was passed on from sick horses to their two-legged associates—whether farmers or chickens—by mosquitoes! Now comes an epidemiologic study of the Minnesota outbreak which concludes that no evidence was uncovered to implicate domestic animals as the cause of human cases. Verily, Zarathustra, you spake a mouthful!

EKLUND, C. M. Human Encephalitis of the Western Equine Type in Minnesota in 1941: Clinical and Epidemiological Study of Serologically Positive Cases. Am. J. Hyg. 43, 2:171 (Mar.), 1946.

"Where We Differ"—Here is a procedure we could stand more of. At their weekly get-together, the supervisors, *et al.* of the New Haven V. N. A. took apart Mountin's *The Future of Public Health Nursing* (previously published) and put it together again more to their own liking. The report upon the operation makes stimulating reading.

FOX, E. G. And It's an Exciting Future! Pub. Health Nurs. 38, 2:51 (Feb.), 1946.

Good News for Syphilitics—Penicillin seems to be living up to its early promise in the treatment of syphilis. That is enough for the run-of-the-mill health worker to remember. Syphilologists will, of course, have studied this symposium, coming as it does from a galaxy of scientist-stars of the first magnitude.

FRAZIER, C. N., and FRIEDEN, E. H. Action of Penicillin, Especially on *Treponema pallidum* (and five related papers). J.A.M.A. 130, 11:677 (Mar. 16), 1946.

They Said They'd Read More V. D. Pamphlets—By means of a questionnaire, 3,000 enlisted men were asked what they thought of the Army's V. D. educational effort. Less than

half had ever had any pre-service sex education. Most of them paid attention, and most thought the program worth while. Seventy per cent worried less about possible infection because of improved treatment methods.

GETZOFF, P. L. Factors Affecting Response to Venereal Disease Education. J. Soc. Hyg. 32, 1:22 (Jan.), 1946.

Promise of Things To Come—Major objectives of the Division of Tuberculosis, U.S.P.H.S.—case-finding, medical care, rehabilitation, and public assistance for families—are to be reported upon in succeeding first-of-the-month issues of *Public Health Reports*. The introductory paper is about the growing pains of the rehabilitation program. It is well that this subject is put out in front, for only one in ten of the tuberculous in need of counselling and aftercare is getting it. There is precious little agreement about what rehabilitation is, or who is to receive it, or who is to give it. But whatever it is, it and all its collateral manifestations—sheltered shops, colonies, homebound employment, and the like—are badly in need of organization into one overall program under the direction of state officials (a program to be detailed, presumably, in later issues).

HILLEBOE, H. E., and KIEFFER, N. C. Rehabilitation and Aftercare in Tuberculosis. Pub. Health Rep. 61, 9:285 (Mar. 1), 1946.

Wartime Mobile Clinics—"One important item of equipment in the children's eyes was a big jar of sweets . . ." That quote (untouched by us) tells how the children of Islington Borough in London were saved from diphtheria. Anguished psychologists hereabouts may dry their tears on this absorptive annotative sleeve—for 80 per cent immunization was achieved in all the wartime confusion.

HIRST, K. M. Fighting Childhood's Foe. Canad. Pub. Health J. 37, 2:77 (Feb.), 1946.

Yard-Stick for Slums or Garden Suburbs—Our Committee on Hygiene of Housing issued an appraisal method for measuring the quality of housing and the Health Commissioner of Milwaukee put it to work in his home town—to good effect apparently. He reports that it will have a profound influence in determining future public policy in housing and city planning. Maybe you, too, might employ this device with equal satisfaction.

KRUMBIEGEL, E. R. An Appraisal Method for Housing Conditions and Needs. The Municipality. 40, 12:259 (Dec.), 1945.

Persistence of the Primitive—Just to complicate the health worker's hours of ease, a number of new scientific publications have made their appearance since our so-called peace raised its threatening head. The latest is a promising addition to our friendly competitors, and one of especial value for those of us who have an itch to write. They will find in Vol. 1, No. 1, a rich vein of source material about all the nauseous messes (in the pharmacopœia of the ancients) that were the natural parents of our sera, hormones, and organ-extracts.

MACKINNEY, L. C. Animal Substances in Materia Medica. J. Hist. of Med. 1, 1:149 (Jan.), 1946.

And No Complaints from Users—Oil-in-water emulsions (by which mineral oil may be impregnated in blankets) really do make dust-laying a practical procedure, say these writers. The emulsions are non-irritating and can be applied in ordinary laundry processes. Neither bactericidal substances alone nor water-soluble dust laying agents are as good as mineral oil.

PUCK, T. T., *et al.* The Oil Treatment of Bedclothes for the Control of Dust-Borne Infection (and two related papers). Am. J. Hyg. 43, 2:91 (Mar.), 1946.

The Tick of the Dog That Loves You—Dogs living close to human cases of spotted fever were found to have sera with high titers. Though the findings of this study suggest more than a casual relation between canine and human cases, more must be learned about the epidemiology of the disease before all the questions can be answered.

SHEPARD, C. C., and TOPPING, N. H. Rocky Mountain Spotted Fever. J. Infect. Dis. 78, 1:63 (Jan.-Feb.), 1946.

Canadian Military Experience With V. D.—Was our educational program worth the effort we put into it? Probably so, these writers agree, a bit dubiously. But, they conclude, education had little effect on the character faults that underlie the problem. The one practical lesson of war experience, they assert, is that active case finding by local health departments offers the best assurance of success in any V. D. program. As it happens, your annotator, John-the-Baptist-like, preached this in the wilderness twenty years ago (*A.J.P.H.*, 18:8), and he takes this occasion to add a fervent amen to the finding.

TICE, J. W., *et al.* Some Observations on Venereal Disease Control in the Royal Canadian Air Force. Canad. Pub. Health J. 37, 2:43 (Feb.), 1946.

Best Sellers in the Book Service for April

The Control of Communicable Diseases. American Public Health Association. 6th ed., 1945	$ .35
Diagnostic Procedures and Reagents. American Public Health Association. 2nd ed., 1945	4.00
Government in Public Health. Harry S. Mustard, M.D., 1945	1.50
Local Health Units for the Nation. Haven Emerson, M.D., 1945	1.25
Municipal and Rural Sanitation. Ehlers and Steel, 1943	4.00
Occupational Lead Exposure and Lead Poisoning, 1943	.75
Recommended Practices for Design, Equipment and Operation of Swimming Pools and Other Public Bathing Places. 1942	.50
Standard Methods for the Examination of Dairy Products. American Public Health Association. 8th ed., 1941 paper	1.75
Voluntary Health Agencies. An Interpretive Study. Selskar M. Gunn and Philip S. Platt, Ph.D., 1945	3.00

Order from the Book Service

AMERICAN PUBLIC HEALTH ASSOCIATION

ASSOCIATION NEWS

SEVENTY-FOURTH ANNUAL MEETING
AMERICAN PUBLIC HEALTH ASSOCIATION
CLEVELAND, OHIO — NOVEMBER 12–14

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RESOLUTION ADOPTED BY THE EXECUTIVE BOARD OF THE A.P.H.A. ON BEHALF OF THE AMERICAN PUBLIC HEALTH ASSOCIATION

March 21, 1946

The American Public Health Association, impressed from first hand reports of public health workers of the actual starvation and destitution from which many persons, especially children, are suffering in war-devastated areas, and believing that prompt and effective relief is essential for the survival of those persons and for world peace, hereby declares its support of the efforts now being made by the United States Government in agreement with other governments to use all necessary measures to extend relief.

The Association commends the President of the United States for his order of February 6 on the world food crisis and for the steps which he has taken to create the Famine Emergency Committee, designed in the shortest possible time to help meet critically urgent needs.

In agreement with other agencies, we commend the inclusion in this relief program, in addition to wheat, of fats and oils and meats, and we especially commend the inclusion of dairy products so essential to child health.

We pledge our utmost effort, both individually and collectively, to enlist coöperation in the program.

THE A.P.H.A. MEMBERSHIP DIRECTORY

A new *A.P.H.A. Membership Directory* (the first since 1937) will be published in August. In this it is planned to show the name and address and full title of every member of the Association. Membership classifications and Section affiliations will also be given. The *Directory* will be geographically arranged and there will be an alphabetical index as well.

The *Directory* will be dated June 1 and information and corrections can be accepted up to May 31 but not beyond this date. A letter was mailed to all A.P.H.A. members in April, requesting the return of a postcard giving information for the *Directory*. The office thanks those members who have already responded with the required information, and reminds those who did not return the postcard to do so before May 31.

EMPLOYMENT SERVICE

The following pages present information for those seeking qualified public health personnel and for those seeking positions in public health.

This is a service of the Association conducted without expense to the employer or employee.

Address all correspondence to the Employment Service, A.P.H.A., 1790 Broadway, New York 19, N. Y., unless otherwise specified.

Vacant Positions Listed with the Association's Vocational Counseling and Placement Service

As this issue of the *Journal* went to press, the Vocational Counseling and Placement Service of the American Public Health Association, 1790 Broadway, New York City, had listed 281 positions available for physicians in public health administration, epidemiology, and in the clinical field. Thirteen positions were offered to non-medical administrators, 7 to public health dentists, 31 to health educators, 32 to laboratory workers, 44 to sanitary engineers, 5 to industrial engineers, 49 to sanitarians, 6 to statisticians, and 5 for nutritionists. A total of 501 positions offered by 149 employers were currently listed. One hundred and fifty-six applicants in all categories were in the record. This represents a substantial increase from the figures of one month previous. Only a part of these openings are covered in listings on the employment page of the *American Journal of Public Health*. Employers and candidates interested should communicate with the Vocational Counseling and Placement Service at the above address.

As previously announced, this service is rendered without charge by the Association, which is assisted for this purpose by the U. S. Public Health Service in a jointly sponsored project carried on under the auspices of the A.P.H.A. Committee on Professional Education, of which William P. Shepard, M.D., of San Francisco, is *Chairman*. It is the aim of this service to place at the disposal of all persons now seeking positions in public health the counsel of those well informed in the field, with a special effort to assist veterans. Public health nursing positions are not listed by the A.P.H.A. but inquiries are forwarded to the N.O.P.H.N. and other nurse placement agencies

Positions Available

(Supplemental to list in April Journal)

Wanted Immediately: Public health nursing supervisor with B.S. degree. Generalized program. Salary from $190 to $225 plus car allowance. City of 105,000. Apply Dr. E. V. Thiehoff, Commissioner of Health, City Health Dept., Peoria, Ill.

Wanted: White and colored public health nurses with cars for Migratory Labor Health Association. Salary $2,100, 40 hour week. Nursing service to Jamaican and domestic farm workers housed in camps in Florida, South Carolina, North Carolina, and Virginia. Apply Area Supervising Nurse, Box 1671, West Palm Beach, Fla.

Position open for bacteriologist-chemist, pathologist. Permanent, full-time. State qualifications, experience and salary expected. Apply Box 583, Fall River, Mass.

Sanitary Engineers and graduate sanitarians, college degree required, wanted for overseas work. Starting salaries from $3,450 to $5,325 depending on qualifications. Full maintenance provided. Apply U.N.R.R.A. Health Division, Building F, 1344 Connecticut Ave., Washington, D. C.

Oregon State Board of Health has openings in following positions: County Health Units Director, salary range $400 to $500 per month. Venereal Disease Control Officer, beginning salary $450 per month. Tuberculosis Control Officer, beginning salary $450 per month. Several county health officer positions open, salary range $400 to $525 per month. Ample travel allowance. Apply A. T. Johnson, Personnel Officer, Oregon State Board of Health, Portland 5, Ore.

Wanted: Physician in Hartford, Conn., population 185,000, as Director of Bureau of Maternal and Child Hygiene. Write Health Officer, Department of Health, Hartford 4, Conn.

Hawaii Board of Health Wants:

Psychiatrist to direct bureau of mental hygiene. Salary $645 to $728.33 plus $45 bonus. Qualifications: 2 years' experience in psychiatry and neurology following graduation from medical school of recognized standing, including or supplemented by 1 year internship in recognized general hospital and supplemented by 2 years' specialized training in psychiatry and neurology.

Obstetrician to assist in execution of program of maternal and child health. Salary $520 to $620 plus $45 bonus. Qualifications: 3 years' experience or specialized training in obstetrics following graduation from medical school of recognized standing, including or supplemented by 1 year internship in recognized general hospital and 1 year graduate training in public health.

Public Health Physician to direct public health program of county district. Salary $520 to $620 plus $45 bonus. Qualifications: 2 years' experience as physician, preferably in public health work, and graduation from medical school of recognized standing, including or supplemented by 1 year internship in recognized general hospital and supplemented by 1 year graduate training in public health.

Three Sanitary Engineers. One as division director with P-5 classification to direct mosquito control program, salary $436.67 to $520 plus $45 bonus. Second position, P-4, that of engineer-in-charge of sanitary engineering projects in county district, salary $362.08 to $436.67 plus $45 bonus. Third position, P-3, that of housing engineer responsible for housing program, salary $295.42 to $362.08. Experience: For sanitary engineer, P-5, 4 years' professional engineering experience of which 2 years shall have been in sanitary engineering work; for county sanitary engineer, P-4, 3 years' experience in sanitary engineering work; for housing engineer, P-3, 2 years' experience in sanitary engineering work, preferably housing. Training: For all 3 sanitary engineers, graduation from college or university of recognized standing, with specialization in engineering, preferably supplemented by courses in public health engineering. Write to Civil Service Commission, Territory of Hawaii, 206 Hale Auhau, Honolulu, Hawaii. Use clipper mail.

Wanted: Assistant in Health Division, Council of Social Agencies, interested in community organization and health education. Large city and metropolitan area. Training and experience in public health organization and health education required. Write **Box G,** Employment Service, A.P.H.A.

Wanted: Public health nurses in newly organized and growing health department, Chicago area. Starting salary $2,100 or more, depending on qualifications, plus $50 monthly travel allowance. Must be Illinois certified or eligible. Apply Director, DuPage County Health Department, 52 East St., Charles Road, Villa Park, Ill.

Sanitary or Public Health Engineer wanted in Training Center in Louisiana, to teach various phases of environmental sanitation practice and supervise field training of sanitary inspectors. Position to be covered by State Civil Service with grade of Public Health Engineer III. Starting salary $350 monthly. Man experienced in the usual and varied activities of county health department desired. Apply Dr. David E. Brown, State Health Officer, New Orleans 7, La.

Wanted: Physician to serve as director of health and hygiene for Board of Education of Cincinnati. Experience in routine medical examinations of adults, in pediatrics and in public health education is desirable. Beginning salary $454 per month on 11 month basis. Apply Board of Education, 216 E. Ninth St., Cincinnati, Ohio.

Public Health Nursing positions available, rural county health departments, Washington State, need urgent. Salary range for qualified public health nurses with experience $190 to $230 plus travel. Write Dr. Arthur L. Ringle, State Director of Health, Smith Tower, Seattle 4, Washington.

Wanted: Public Health Nurses, one white and one colored, with special training in tuberculosis work, to act as consultants, advise field nurses regarding their home visits, participate in student educational program, participate in staff educational program and act as consultants to tuberculosis clinics for Louisville and Jefferson County Health Dept., which is affiliated with University of Louisville School of Medicine. Salary $175 per month. Also Supervisor to supervise districts in general program. Applications received by Louisville Civil Service Board, 300 City Hall, Louisville 2, Ky.

Wanted Immediately: Physician to serve as health officer in large local department in State of Washington. Salary range $5,280 to $6,300, entrance varying with education and experience of candidate. For full details write Dr. Arthur L. Ringle, State Director of Health, Smith Tower, Seattle, Wash.

Wanted: Experienced Sanitarians with college degree to serve in local health

departments. **Salary range** $2,400 to $2,880, entrance varying with education and experience of candidate. Opportunities of advancement to Senior Sanitarian with salary range $2,760 to $3,360. For full details write Dr. Arthur L. Ringle, State Director of Health, Smith Tower, Seattle, Wash.

Wanted: **Sanitarian** to conduct survey and educational work in food factory sanitation in East and Middle West for trade association; must be well grounded in principles of plant sanitation and have speaking ability. Apply National Canners Assn., Research Laboratories, 1739 H St., N.W., Washington, D. C.

Health Officers Wanted: Positions open in Georgia for county and district commissioners of health. Salaries for experienced public health physicians range from $4,800 to $6,600. Salaries for physicians with public health training who are entering the field range from $3,960 to $4,920. Liberal travel allowance. Tenure of office assured by a merit system. License to practise in Georgia required. Ample opportunities for training offered with liberal stipend while in training. Write T. F. Abercrombie, M.D., Director, State Health Dept., State Office Bldg., Atlanta 3, Ga., for application and full details.

Sanitarians Wanted: Several permanent positions available for sanitarians in County and District Health Depts. in Georgia. Salaries range from $2,100 to $3,360 varying with education, experience, and duties assigned. Liberal travel allowance given. College graduates preferred but opportunities available for non-college graduates who can offer experience in sanitation activities. Write Personnel Administrator, State Health Dept., Atlanta 3, Ga., for application and full details.

Tuberculosis Control Officers Wanted: A program of increased emphasis on control of tuberculosis requires 9 additional tuberculosis control officers in Georgia Dept. of Public Health. Salaries from $4,800 to $6,600 plus travel, according to education, experience, duties assigned, and length of service. Some positions available for physicians experienced in tuberculosis diagnosis and treatment who do not yet have public health experience. Write Dr. T. F. Abercrombie, Director State Health Dept., State Office Bldg., Atlanta 3, Ga., for application and full details.

Public Health Nurses needed in Georgia. State and County Depts. of Public Health in Georgia invite qualified public health nurses to apply for permanent positions in Georgia. Staff nurses must have minimum of 6 months postgraduate public health nursing education in addition to acceptable basic training. Salaries range from $1,860 to $2,040 in addition to liberal travel allowance. Supervisory nurses must mave at least 2 years' experience in public health nursing as well as 1 academic year of postgraduate training in public health nursing. Salaries range from $2,100 to $2,280 in addition to travel allowance. Scholarships available for graduate nurses interested in receiving public health nursing training. Write Personnel Administrator, State Health Dept., Atlanta 3, Ga., for application and full details.

POSITIONS WANTED

Senior Bacteriologist, Ph.D., 25 years' experience in public health and medical bacteriology, 3 years executive laboratory post in Army general hospitals, seeks hospital or public health laboratory connection. **L-487**

Bacteriologist, woman, B.S. 1941, 4½ years' laboratory experience, hospital and public health, seeks position in or near New York City. Prefers desk position such as technical literature research, abstracting, etc. Also interested in laboratory work. **L-481**

Bacteriologist: M.A., Johns Hopkins, seeks position in medical college or state public health laboratory. Broad experience. **L-482**

Chemist, experienced in food, drug and insecticide analysis, seeks laboratory position. **L-483**

Serologist-Bacteriologist, Ph.D., D.V.M., 16 years' experience in public health and hospital work, 3 years in charge Army hospital laboratory. Desires Directorship with opportunity for research. **L-426**

Serologist, A.M., over 7 years' experience in serology of syphilis and related fields in state health dept. laboratory and in central laboratories of U. S. Army desires position as head of serology section of state health department or research institute. Wide knowledge of public health laboratory procedures. **L-489**

Announcement of Examination for Appointment of Sanitary Engineers to the United States Public Health Service

An examination for appointment as Assistant Sanitary Engineer and Senior Assistant Sanitary Engineer in the Regular Commissioned Corps of the United States Public Health Service is scheduled to be held at

Washington, D. C.—USPHS Dispensary, Fourth and D Streets, S.W.....	June 3
Atlanta, Georgia—Malaria Control in War Areas, 605 Volunteer Bldg.....	May 15
New Orleans, Louisiana—Marine Hospital, 210 State Street.....	May 17
Los Angeles, California—USPHS Relief Station, 406 Federal Bldg.....	May 21
San Francisco, California—Marine Hospital, 14th Ave. and Park Blvd.....	May 23
Seattle, Washington—Marine Hospital, Judkins St. and 14th Ave. South..	May 27
Denver, Colorado—USPHS District Office, 617 Colorado Building.....	May 29
Chicago, Illinois—Marine Hospital, 4141 Clarendon Avenue.....	May 31

The oral professional, academic, and physical examinations will be held at 9 A.M. at places and dates given above. The final written portion of the examination will be given simultaneously at the above locations beginning on June 5, 1946, and ending on June 7, 1946. The written portion of the examination may be given at certain other stations of the Service where two or more regular commissioned officers are on duty, if request is made by an applicant. Minimum age—21.

Education and Training: (1) Assistant, at least 7 years of educational (exclusive of high school) and professional training or experience and a degree in engineering (sanitary engineering course); (2) Senior Assistant, as above plus 4 additional years of post-graduate professional training or experience.

Compensation (including allowance for quarters and subsistence): (1) Assistant, $3,411.00 with, and $2,975.50 without dependents; (2) Senior Assistant $3,991.00 with, and $3,555.50 without dependents.

Applicants should address a letter to the Surgeon General, U. S. Public Health Service, Washington, D. C., at the earliest practicable date, requesting application blanks. Such letter should include a brief biographical statement relative to professional school or college attended, type of studies pursued, degrees granted and subsequent training or experience. Applicants of foreign birth must furnish proof of United States citizenship.

Transportation expenses to and from and cost of maintenance at place of examination must be assumed by the candidate.

Announcement of Scholarships in Nutrition

Four scholarships available, through North Carolina State Board of Health, at University of Tennessee, Knoxville, for year 1946. Applicants can enter in March or June. Scholarships will provide stipend of $100 a month for 12 months plus tuition fees and travel while in training. Training period will be for 12 months and will include 9 months' formal training and 3 months' supervised field work. Eligibility requirements: (a) Age between 23 and 35 years; (b) Bachelor's degree in foods and nutrition, chemistry or biological sciences from a recognized institution; (c) teaching, hospital dietetics, nutrition research or other related subjects for a period of at least 2 years. Upon successful completion of training at University of Tennessee, candidates will be employed as nutritionists by North Carolina State Board of Health. Salary scale for nutritionists is $1,800 to $3,000 with additional travel allowance of $1,200 a year. Interested applicants should send transcript of their college record and statement of experience since graduation to Director of Nutrition Division, State Board of Health, Raleigh, N. C.

New York State Department of Health Offers Scholarships

Tuition for two semesters' study in public health nursing at approved university and monthly maintenance of $100 for graduate nurses qualifying. Must be eligible to register in New York State. After preparation there is a two year field obligation to serve as rural public health nurse in upstate New York. Apply to Katherine E. Payne, R.N., New York State Department of Health, Albany 1, N. Y.

Advertisement

Opportunities Available

WANTED—(a) Public health director; county of 72,000 inaugurating new county health department; plans being made for staff of sixteen; physician trained and experienced in public health work required; headquarters in college town of 40,000. (b) Professor and head of department of hygiene; state university planning expansion program and offering curriculum in public health whereby students may major and receive Baccalaureate degree; young man experienced in teaching qualified to develop program required. (c) Student health physician to join staff of college expecting much greater enrollment this fall; present enrollment 4,000 students; 50 bed infirmary having excellent laboratory facilities; staff of eight nurses; town of 16,000; Southwest. (d) Physician experienced or trained in public health to take charge of rural county health departments located in vicinity of several large cities including university medical center; $6,000; Middle West. **PH5-1** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

WANTED—Dentist, well qualified in field of preventive public health and children's dentistry, public health experience or training desirable; duties consist of work on prenatal patients, child health conferences and principally inaugurating a recognized program of preventive dentistry in primary and secondary schools; California. **PH5-2** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

WANTED—(a) Health educator to organize and direct program of dental health education; duties include working quite closely with the public schools; must be well qualified in public relations; dentist qualified in public health work eligible; $3,600–$5,000. (b) Health educator; industrial hygiene division of state department of health; young man with Ph.D. and industrial experience required; Middle West. (c) Executive secretaries and health educator for posts with tuberculosis and health association organized to carry on continuous campaign of information and education of the general public in regard to tuberculosis, venereal and communicable diseases; East. **PH5-3** The Medical bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

WANTED—Several sanitarians to become associated with state department of public health entering expanded program of activities; openings for county sanitary officers and, also, assistant sanitary officers. **PH5-4** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

WANTED—(a) School health nurse; Northern California; $2,300–$2,600. (b) Executive secretary; large district office with great many nursing activities; someone who can work with various community agencies required; $3,500. (c) Student health nurse; newly created department, state teachers college; duties include developing and supervising health education program; Middle West. (d) Supervisory and staff nurses; department having important expansion program; East. (e) Field nursing consultant; industrial hygiene program; minimum $3,000. (f) School nurse qualified in public health nursing; New York State. (g) Several public health supervisors and, also, staff nurses; generalized program; headquarters in fashionable winter resort town; fine climate, excellent opportunity for advancement. **PH5-5** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

Advertisement

Opportunities Wanted

Sanitarian; B.S., Civil Engineering; M.S., Sanitary Engineering; experience consists of six years as chief operator and bacteriologist of water treatment plant; four years as sanitary engineer for water treatment and sewage treatment plants; recently discharged from military service; for further information, please write Burneice Larson, Director, The Medical Bureau, Palmolive Building, Chicago 11.

Public Health physician; Master's degree in Public Health, Johns Hopkins; twelve years' experience as professor of preventive medicine, public health and industrial medicine, university medical school; for further information, please write Burneice Larson, Director, The Medical Bureau, Palmolive Building, Chicago 11.

Bacteriologist and parasitologist; B.A. (major, zoology); M.A. (major, bacteriology); Ph.D. (major, parasitology); two years' teaching experience; parasitologist with Navy since 1941; expects early discharge; for further information, please write Burneice Larson, Director, The Medical Bureau, Palmolive Building, Chicago 11.

Health educator; B.S., M.S. and Ph.D. degrees; several years, instructor in biology, bacteriology and health; state university; three years, public health educator; city and county health department; for further information, please write Burneice Larson, Director, The Medical Bureau, Palmolive Building, Chicago 11.

Dentist; D.D.S., university medical school; several years' private practice; year of postgraduate training in public health hygiene with special emphasis on public health dentistry for which he received degree of M.S.P.H.; several years, state department of health; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

NEWS FROM THE FIELD

Sanitary Engineers on Duty with UNRRA Make Valuable Contribution

U. S. Public Health Service sanitary engineers on duty with the United Nations Relief and Rehabilitation Administration are making valuable contributions to the health of victims of the war.

In June, 1944, the first UNRRA health teams arriving at the camps for displaced persons in Egypt and Syria, included 24 engineers. They found work to do under conditions that were a challenge to their inventive ability and resourcefulness. At that time few supplies were available in the camps to combat the diseases which invariably prevail when groups of people from scattered parts of the world live together under crowded conditions.

In El Shatt Camp, many of the refugees were found to have bacillary or amebic dysentery. Tracing the source of infection, the engineers found it in the native workers in the kitchen who had no conception of modern sanitation and whose training had not prepared them to take precautions against the spreading of disease. When the refugee women, who had been taught to be immaculate in their habits, took over the preparation and serving of food the dysentery gradually disappeared.

At the camp in Nuseirat, the high percentage of dysentery was found to be caused by fresh vegetables and fruit which had been fertilized with human excreta. Since it was impossible to stop the people from buying and eating the infected food, the engineers devised a method of sterilizing it. The food was soaked in a chlorine solution for ½ hour and then rinsed off in clear water to remove the chlorine taste. After this was done the percentage of dysentery among the inhabitants of the camps dropped sharply.

The sanitation program set up in the camps by Colonel Daniel E. Wright, Chief Sanitary Engineer, included a training course, in which the refugees, acting at first as understudies to the trained UNRRA workers, were gradually given more and more responsibility and eventually were able to run their own sanitation program. Colonel Wright is confident that the native lands of these trained workers will benefit from their new-found awareness of the importance of adequate sanitary protection and their knowledge of modern methods of disease control. The proudest and most efficient workers were elderly women who were latrine attendants. They kept the latrines immaculate and made all users obey the rules that had been set up to keep the latrines sanitary.

A main problem was to keep flies from spreading infection by going from latrines to kitchens. This was done by screening of the latrines and kitchens and spraying with DDT. It was also necessary to keep flies away from the garbage and to devise a method of disposal of it, as there were, of course, no disposal facilities for this in the primitive community. When the garbage was first removed from the kitchen it was temporarily stored in large bins covered with burlap which had been soaked in creosote and held down by a weighted hoop. Later the waste was buried in a ditch in the desert, and the depository was sprayed with creosote.

With the sanitation program in the camps well established, the engineers

moved, with other members of the health teams, into Greece, and later into Italy, Yugoslavia, and Germany to work in the camps for displaced persons, Austria and China. They are continuing their in these countries.

Everywhere they found filth and devastation left by war. In Salonika, Greece, the Germans had left 200 tons of garbage piled in the city streets and had taken away every possible means of transportation. The UNRRA engineers carted the refuse away in trucks, and within a few days it was all buried and the city was a correspondingly more pleasant and habitable place.

Public health workers have found scattered cases of louse-borne typhus in almost every country they have entered. The threat of typhus is an almost inevitable result of wars as people are crowded together in prisons, hospitals, and concentration and refugee camps, with no opportunity to keep clean. The members of the UNRRA health teams trained natives in methods of delousing and dusting with DDT, with the result that to date there have been no significant typhus outbreaks such as followed World War I.

The health teams found the hospitals in Greece in a pitiable state. There were no windows, few doors. Cockroaches crawled about the floors and walls of many. There was no drinking water. The Greek National Hospital in Athens, located in the basement of a tobacco factory and used as a fortress during the Greek Civil War, was one of the worst damaged places in the city. The engineers supervised the drilling of wells to supply a healthful water supply, and dusted the hospital with DDT to kill cockroaches and lice.

Today sanitary engineers are at work in almost every country where UNRRA operates, and enough officers are to be recruited to continue the program in every UNRRA aided country. In Europe this spring an intensive program is being extended to combat malaria in Greece, Italy, Yugoslavia, and other malaria plagued countries.

Twelve planes have been procured for use in an air attack against the malarial mosquito, and sanitation workers are now beginning to spray the swamps and marshes where the malarial mosquito breeds, using solutions of DDT, paris green, and various oils that destroy the larvae. Other workers are spraying the interiors of buildings where the adult mosquitoes might hibernate and natives are helping to screen their own homes and buildings.

In many low swampy areas in Italy and Greece and other war-stricken lands, the percentage of malaria morbidity is very high. The number of working hours lost by victims of malaria is almost incalculable, and hundreds actually die of the disease each year.

Last year, despite the fact that the UNRRA anti-malaria program was just getting under way and the lack of adequate supplies and transportation made obstacles to effective work, the incidence of malaria in Greece was considerably lowered. The engineers stationed in countries receiving aid from UNRRA are assisting in programs which will apply modern methods to the age old problem of malaria control.

WILBUR A. SAWYER, *Director,*
UNRRA Health Division

MEDALS OF MERIT FOR ARMY'S PREVENTIVE MEDICINE PROGRAM

Major General Norman T. Kirk, Surgeon General of the Army, at the March meeting of the Medical Department officers, presented Medals of Merit signed by President Truman to three eminent scientists for their work in the Army's preventive medicine program which gave the nation the healthiest

Army in history. The men honored are: Dr. Francis Gilman Blake, President of the Army Epidemiological Board; Dr. Alfred Newton Richards, Chairman of the Committee on Medical Research, Office of Scientific Research and Development; and Dr. Lewis H. Weed, Chairman of the Division of Medical Sciences, National Research Council.

In 1940 Dr. Blake, then Dean of the Yale School of Medicine, assisted in the organization of the Army Epidemiological Board and became its first President in 1941, serving as consultant to the Secretary of War. Late in 1941 he directed a special commission of the Surgeon General and the Typhus Commission to investigate scrub typhus in New Guinea. Basic principles of control measures were formulated as well as practical measures for the protection of troops. A wealth of valuable material was also acquired for use in investigations in this country, which has become the main center of research on scrub typhus since Dr. Blake's return.

Dr. Richards, who was Professor of Pharmacology at the University of Pennsylvania, undertook direction of the Committee on Medical Research in July, 1941. Three of the outstanding contributions made in preventive and therapeutic medicine include the development of blood plasma for combating shock on the battlefield, the development of penicillin from "a laboratory curiosity to a life-saving agent," and the discovery of new insect repellents which have been successful in bringing under control such insect-borne diseases as malaria and typhus.

Dr. Weed, who is also Director of the Johns Hopkins Medical School, in his work with the National Research Council, played an influential rôle in mobilizing the scientific resources of medicine to meet the emergencies of war. Committees of leading civilian scientists were formed to make recommendations upon request of the Surgeons General of the Army and Navy concerning policies and procedures in the prevention and cure of diseases. Dr. Weed is also serving currently as Chairman of the National Advisory Committee of the American Red Cross.

NATIONAL MALARIA SOCIETY

The National Malaria Society held its 28th annual meeting in Cincinnati, Ohio, recently. Twenty-four papers were presented at two sessions, one of which was a joint session with the American Society of Tropical Medicine. At the business meeting, the following officers were elected for 1946:

Honorary President: J. A. LePrince, Memphis, Tenn.

President: Dr. Mark F. Boyd, Tallahassee, Fla.

President-Elect: Mark D. Hollis, Atlanta, Ga.

Vice-President: J. A. Mulrennan, Jacksonville, Fla.

Secretary-Treasurer: Dr. Martin D. Young, Columbia, S. C.

MORE ABOUT THE INTERNATIONAL HEALTH ORGANIZATION

Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, has been in Paris as a member of the Technical Preparatory Committee named by the Economic and Social Council of the United Nations to prepare for a conference in June for the purpose of establishing an International Health Organization. This conference is the outgrowth of unanimous approval for "international action in the field of health" at the San Francisco Conference of UN. In approving the declaration, the Social and Economic Council requested that governments send public health officials to the Conference. With Dr. Parran in Paris were Dr. James A. Doull, Director of the U. S. Public Health Service Office of International Health Relations, Dr. H. van Zile Hyde, Senior Surgeon, U.S. P.H.S., and Marcia Maylott of the State Department.

Dr. Parran is the Chairman of an Advisory Health Group of national public health and allied leaders called together by the State Department in October, 1945, which urged prompt United States action toward the establishment of a single, official international health organization. In December, 1945, the Senate passed a resolution requesting the President to take immediate steps toward the convening of an early health conference and formation of an international health organization.

The new International Health Organization, when completed, will have among its first tasks the continuance of the 1944 sanitary conventions, or international agreements, which were adopted for a limited period by 17 nations. These agreements date back to the maritime sanitary convention of 1926 and the aerial sanitary convention of 1933 which were developed with the aid of the International Office of Public Health. This organization is composed of 59 nations signatory to the Paris International Health Convention of 1903 or the 1907 Treaty of Rome. Its work of interchange of information concerning the five "conventional" communicable diseases, smallpox, plague, cholera, yellow fever, and typhus fever, and its work on international sanitary agreements was largely circumscribed after the occupation of Paris. Hence UNRRA and its Health Division undertook to carry on its work.

The second body of experience that will contribute to and presumably be incorporated in that of the new International Health Organization is the League of Nations Health Organization established in 1922. Serving as its Advisory Council, in the absence of a world atmosphere favorable to a single international organization, was the Permanent Committee of the International Office of Public Health, whose ad Interim President is Dr. Hugh S. Cumming, former Surgeon General of the United States Public Health Service.

The work of the League's Health Organization that was perhaps of greatest significance in guiding the contemplated new organization was the assistance it gave to nations in strengthening their national health services, particularly China and Greece. It also conducted studies of malaria, nutrition, rural hygiene, cancer, and leprosy; it standardized drugs and biologicals and stimulated the international exchange of students and experts. At the beginning of the war it was initiating studies in housing and physical education, but its activities were greatly restricted. Its functions and assets have been temporarily assumed by UN, pending the final launching of the new health organization.

The Pan American Sanitary Bureau, whose director is also Dr. Cumming, has expanded its responsibilities during the war. The June conference is expected to discuss its usefulness to the new international organization in a regional capacity.

AMERICAN ACADEMY OF PEDIATRICS STUDY OF CHILD HEALTH SERVICES

According to a report from George St. John Perrott, Chief of the Division of Public Health Methods, U. S. Public Health Service, Washington, a study of child health services has been launched on a nation-wide basis under the joint sponsorship of the American Academy of Pediatrics, the U. S. Public Health Service, and the U. S. Children's Bureau. It has arisen out of a resolution adopted by the Academy "to make available to all mothers and children of the U.S.A. all essential preventive, diagnostic, and curative services of high quality, which, used in coöperation with other services for children, will make this country an ideal place for children to grow into responsible citizens."

As a first step toward this objective

the study has been organized to assemble information on every aspect of public health and medical care for children; it is unique in the sense that it was instigated by and is being carried on by a nationally organized medical group. The responsibility for the actual conduct of the study rests with the Academy, but both the federal agencies are contributing to the success of the program by providing the services of expert medical and statistical personnel. The project is unusual in that it represents a coöperative attempt on the part of private and official medical and health organizations to discover the facts about medical care for children as a basis for future planning.

According to Mr. Perrott, the Academy of Pediatrics has appointed John P. Hubbard, M.D., of Boston, as Director of the study. Katherine Bain, M.D., of the U. S. Children's Bureau staff, and Charles L. Williams, Jr., M.D., and Rollo Britten of the U. S. Public Health Service staff, have been assigned to the Academy by their respective agencies to assist in the study.

One of the fundamental purposes of the study, according to Mr. Perrott, is to stimulate local groups to discover for themselves the needs of their own communities and the existing facilities to meet those needs. A vast amount of data will be required before community planning can be undertaken on a sound basis. Data essential to the study will be collected from hospitals and institutions, official and voluntary health agencies, and physicians and dentists engaged in active practice relating to child health. The information sought will be collected on a state basis by means of personal visits and questionnaire schedules. Each state program will be under the supervision of the state chairman of the Academy of Pediatrics, who with the assistance of an Executive Secretary and Assistants, will be responsible for the administration and coördination of the study within his state.

Another aspect is the collection of information concerning local official and voluntary health services for children, including well child conferences, school health programs, dental clinics, and public health nursing activities. To secure complete and accurate data relating to these activities, the coöperation of all state, district, and local health departments is essential. The American Academy of Pediatrics has formally requested the support and assistance of all public health officials in insuring the success of the study. This request addressed by a national medical organization of high standing to governmental agencies represents another milestone in coöperative action. It affords an opportunity for the two groups to combine their resources and abilities for the successful completion of an important study.

Considerable progress has already been made. A "pilot" study has been completed in North Carolina which has afforded much valuable experience in testing out proposed procedures, and preliminary steps have been taken in some 30 states and the District of Columbia toward setting up individual state programs. Many state health officers have been approached, and many others will receive information and visits from state chairmen. The rôle of the official health agency is an important one, and the contribution of official groups both in supplying the needed data and in wholehearted promotion of the study should prove of mutual benefit to all organizations involved.

SANITATION RESEARCH PROJECT

As a means toward providing increased health protection to railway passengers and employees as well as the general public, the Association of American Railroads has established a

Sanitation Research Project. Under the direction of Abel Wolman, Dr. Eng., Consulting Engineer and Professor of Sanitary Engineering at the Johns Hopkins University, the project will function in collaboration with the Joint Committee on Railway Sanitation, an advisory organization of the Association of American Railroads which has been operating since 1922.

Designed to cover all phases of railway sanitation, such as food handling, water supply and treatment, and disposal of wastes on railway cars and in terminals, the first objective of the project is the development of a sanitary means for the handling and disposal of toilet wastes from passenger-carrying cars.

Dr. Wolman's principal assistants are: Lloyd K. Clark, Project Manager, former Director of the Division of Sanitary Engineering of the North Dakota State Health Department; and William A. Hazlett, Mechanical Engineer, formerly employed by the Bethlehem Steel Company as Test Engineer in the Mechanical Department. Both Clark and Hazlett have been recently relieved from active duty with the Army as Lt. Colonel and Captain respectively.

Offices and laboratories of the project are located at 1103 West Platt Street, Baltimore 23, Md.

NATIONAL HEALTH COUNCIL ELECTS OFFICERS

The National Health Council, Inc., New York City, made up of an inclusive group of voluntary health agencies, held its annual meeting on March 22. A program of enlarged services for the Council was discussed by 90 representatives of the 21 member agencies who were present. Dr. George Baehr, President of the New York Academy of Medicine, spoke at the luncheon session on "The Future of the Voluntary Health Movement" and stressed the need for coördination of the services of the privately supported health societies. Mrs. Eleanor Brown Merrill, retiring President of the Council, presided and reported on the activities of the organization during the past year. She reviewed the projected program of field services of health agencies and the organization of local health councils carried out under a project financially supported by the Rockefeller Foundation. Walter Clarke, M.D., Vice-President and Chairman of the Executive Committee, also reported.

Philip R. Mather, industrialist and philanthropist of Boston, Mass., was elected President of the Council. Mr. Mather has been associated as director or committee member with many social and civic organizations, including the American Social Hygiene Association, the National War Fund, Greater Boston United War Fund, and social agencies in Cleveland, Ohio. Continuing the work of his father, the late Samuel Mather, he worked for and assisted several civic enterprises before he moved to Boston.

Beside Mr. Mather, other officers elected for the coming year include *Vice-President* and *Chairman of the Executive Committee* Ira V. Hiscock, Sc.D., New Haven, Conn.; *Secretary*, Reginald M. Atwater, M.D., New York City; *Treasurer*, Timothy M. Pfeiffer, New York City; members of the new Executive Committee include the four officers of the Council as well as Mason Bigelow, Mrs. Shepard Krech, Mrs. Albert Lasker, Ruth Houlton, R.N., G. Foard McGinnes, M.D., and Robert H. Bishop, M.D. Louis I. Dublin, Ph.D., has been elected Chairman of the Citizens Planning Committee of the Council. Other newly elected officers of this group include: Mrs. Albert Lasker, Vice-Chairman, and Howard A. Rusk, M.D., Secretary.

The National Health Council, which was organized in 1921, includes among its member organizations the National

Tuberculosis Association, The American Cancer Society, The American Red Cross, The American Social Hygiene Association, The American Heart Association, The American Public Health Association, The National Organization for Public Health Nursing, and 14 other national health groups.

DIRECTORY OF PLACEMENT AGENCIES FOR INDUSTRIAL HEALTH PERSONNEL

The Health Advisory Council of the United States Chamber of Commerce, Washington, D. C., has recently published a directory of placement agencies for industrial health personnel. It lists 11 agencies, among them the American Public Health Association, handling placement of all industrial health presonnel, as well as a number of agencies that place only physicians, dentists, nurses, or chemists. There is also a list of 6 institutions offering courses in industrial nursing.

The foreword of the directory says, "The necessity for peak production during the war stimulated the provision of health service in industry. It confirmed what intelligent industrial managers already knew—that health provision for employees cuts down absenteeism, increases productive capacity, and means dollars to both management and worker."

DR. BRISTOL LEADS A.P.W.A. COMMITTEE ON MEDICAL CARE

The American Public Welfare Association, Chicago, has announced the appointment of Leverett D. Bristol, M.D., Dr.P.H., State Commissioner of Health and Welfare, Augusta, Me., as Chairman of the A.P.W.A. National Committee on Medical Care. In accepting the appointment Dr. Bristol stated that the committee will consider the adequacy of medical care for persons in need, the development of wise administrative procedures to cover the medical aspects of public assistance, and a satisfactory program for the care of the chronically ill.

PROPOSED BUILDING FOR U. S. ARMY MEDICAL LIBRARY

John F. Fulton, M.D., the President of the Honorary Consultants to the Army Medical Library, has announced that a project has been advanced to ask Congress for ten million dollars for an adequate building for the Army Medical Library. A similar plan under way at the outbreak of the war proposed a building to be erected at a cost not exceeding $4,750,000. Hearings have been called before the Budget and Congressional Committees to determine whether a new building will be erected on Capitol Hill to house what is said to be the greatest collection of medical books in the world.

According to Dr. Fulton, the Library has been reorganized and it is impossible longer to carry on in the present building which was built in 1887. It is desired that those interested in promoting an adequate building let their opinions be known to their Congressmen or to Dr. Fulton at Yale University School of Medicine, New Haven, Conn.

AMERICAN DIPHTHERIA CONSULTANTS CALLED TO EUROPE

Martin Frobisher, Jr., D.Sc., and Franklin H. Top, M.D., D.P.H., have been called as consultants to the Military Government in the European Theatre to advise in connection with the current outbreak of diphtheria. Dr. Frobisher, from the staff of the Johns Hopkins School of Hygiene and Public Health in Baltimore, and Dr. Top, from the Department of Health in Detroit, Mich., will serve under Major General M. C. Stayer, M.C., U.S.A. Dr. Frobisher is a member of the Study Committee on Diphtheria of the Subcommittee on Evaluation of Administrative Practices and has served as the referee for diphtheria cultures for this group.

Dr. Top, who is Medical Director of the Herman Kiefer Hospital in Detroit is also author of the volume, *Handbook of Communicable Diseases.*

RED CROSS ESTABLISHES OFFICE OF HEALTH SERVICES

On March 1, 1946, G. Foard McGinnes, M.D., Dr.P.H., Medical Director of the American Red Cross, was named Vice Chairman for Health Services to direct a newly established Office for Health Services. The new office groups together all Red Cross services relating to health and medical activities: the office of the medical director, the nursing, nutrition, and disaster medical service, first aid, water supply and accident prevention. The new consolidated group is expected to conserve both funds and effort and provide maximum benefit as well, in a period of expanding Red Cross health and medical projects provided coöperatively with other agencies.

Dr. McGinnes, who served in the U. S. Marine Corps in the first World War, became national medical director of the Red Cross, having previously served the midwestern area office in a similar capacity. In addition to his M.D. degree from the University of Virginia, he holds M.P.H. and Dr.P.H. degrees from the Johns Hopkins School of Hygiene and Public Health.

DR. LOWELL REED IN NEW POST AT JOHNS HOPKINS UNIVERSITY

Dr. Isaiah Bowman, President of The Johns Hopkins University, recently announced the appointment of Lowell J. Reed, Ph.D., as Vice-President of the University, effective March 6, 1946. Dr. Reed will be Chairman of an Executive Committee directing the activities of a General Committee of professional representatives of The School of Medicine, the School of Hygiene, and the Hospital. This committee will make policy recommendations to the Boards of Trustees of the Medical School and Hospital. Creation of the new position is designed to bring about closer coördination in the development of the Medical Center of which the institutions are a part.

On July 1, 1946, Ernest Lyman Stebbins, M.D., until recently Health Commissioner of New York City, will succeed Dr. Reed as Director of the School of Hygiene and Public Health, a post held by Dr. Reed since 1937.

NEW STANDARD METHOD OF COMPILING INDUSTRIAL INJURY RATES

The American Standards Association has completed a new code recording and measuring industrial injury experience on a uniform basis throughout the country, regardless of workmen's compensation laws and rulings. It includes full instructions in the method of compiling accident records so that those of all industries will be comparable in each item, and can thus be developed into a sound statistical basis for future industrial safety codes.

The resulting injury rates may be also used to evaluate the relative need for accident prevention work in different departments of an industry, the seriousness of the accident problem and the progress made in prevention in plant or industry, and the effectiveness of safety activities in plants with comparable hazards.

The new *American Standard, Method of Compiling Industrial Injury Rates* is available from the American Standards Association, 70 E. 45th Street, New York 17. 25 cents.

COLONEL DIEUAIDE TO LIFE INSURANCE RESEARCH FUND

On April 1, Colonel Francis R. Dieuaide became scientific director of the Life Insurance Medical Research Fund. Established in June, 1945, by contributions of 148 life insurance companies, this fund makes grants to medical schools and universities for re-

search on heart and related diseases in recognition of the fact that although they are currently the principal causes of death in the United States, relatively little research on their causes and prevention is being carried on.

At the November meeting of the Fund's Advisory Council, grants totaling $126,000 to 8 medical schools were made. At the recent March meeting additional grants of $310,000 to 27 institutions were made. It is expected that more than $3,000,000 will be made available over the next five years. As scientific director, Colonel Dieuaide will investigate applications for funds and make recommendations to the Advisory Council.

Since 1943 Colonel Dieuaide has been chief of the tropical disease treatment branch of the Surgeon General's Office, in which capacity he received the Legion of Merit for his supervision of the treatment of malaria and other tropical diseases. Earlier he was Clinical Professor of Medicine at the Harvard Medical School.

DR. KILBOURNE SUCCEEDS DR. COGSWELL

W. F. Cogswell, M.D., for 34 years Executive Officer of the Montana State Board of Health, retired April 1, intending to devote his time to writing a history of the Rocky Mountain spotted fever research work in Montana. He will be retained as a permanent consultant to the Board.

B. K. Kilbourne, M.D., Epidemiologist of the department since 1935, succeeds Dr. Cogswell.

COLONEL GOTAAS AWARDED LEGION OF MERIT

In recognition of his services in carrying forward coöperative hemisphere health and sanitation programs, Colonel Harold B. Gotaas, Acting Director of the Office of Inter-American Affairs, has been awarded the decoration of Legion of Merit.

The citation lauded the Colonel for "exceptional meritorious conduct in the performance of outstanding services" in conducting health and sanitation work of the Institute of Inter-American Affairs, an agency of the Office of Inter-American Affairs.

With the Institute since the start of its coöperative work in the other American republics in 1942, Colonel Gotaas has served as Chief Engineer, Director of the Health and Sanitation Division, and as President. He has also been closely connected with coöperative programs of other Office divisions in food supply, education, and transportation.

NATIONAL NEGRO HEALTH WEEK

The 32nd National Negro Health Week was sponsored by the U. S. Public Health Service during the week beginning on March 31 and ending April 7.

In 1946, the special objective of this week devoted to promoting better health among Negroes was "A Healthy Home in a Healthy Community: Health Education and Health Services." The U. S. Public Health Service set aside each day for emphasis upon some particular phase of personal, home, or community hygiene. There were talks, lectures, clean-up campaigns, special clinics and poster contests. Although an intensive campaign was planned in most Negro communities to stress this year's special objective, the importance of year-round public health services was also emphasized.

MASSACHUSETTS FOOD INSTITUTE

The Massachusetts Dietetic Association and Simmons College will sponsor a Food Institute on "Organization and Management" from June 6 to 8. An exceptionally complete program will include: Problems of Administration, Food Cost and Service Control, Marketing, Maintenance and Sanitation for

Food Departments, Labor and Management Relation, and many other timely subjects.

UNITED STATES-MEXICO BORDER PUBLIC HEALTH ASSOCIATION ANNUAL MEETING

The United States-Mexico Border Public Health Association held its Fourth Annual Meeting in El Paso and Juarez, Chihuahua, on April 29 to May 1.

LEGION OF MERIT TO J. EDWARD DEHNE

The Legion of Merit has been awarded to Colonel J. Edward Dehne, M.D., Bismarck, N. D., for "exceptionally meritorious conduct . . . untiring efforts and valuable technical ability," when Executive Officer and Assistant Division Surgeon of the European Civil Affairs Medical Group.

Col. Dehne, who already possesses the Purple Heart and Certificate of Merit, is at present continuing on active duty as Chief of Preventive Medicine, Public Health Branch, OMG in Germany, until public health problems related to occupation of Germany are considered under control.

PANAMA CITY PLANS TUBERCULOSIS HOSPITAL

Construction of a $5,000,000 hospital in Panama City for tuberculosis patients was outlined by Octavio Vallarino, Minister of Health and Labor of the Republic of Panama.

Expressing belief in "an ounce of prevention," Vallarino pointed out that tuberculosis cases in Panama were not on the increase. He explained, however, that the construction of the hospital, for which an appropriation had already been approved, would serve to combat the disease through preparedness. Small hospitals are providing excellent care and treatment in less populated cities throughout Panama, he stated.

SOCIETY OF AMERICAN BACTERIOLOGISTS

The Society of American Bacteriologists announces that the following officers have been elected to serve in 1946:

President—Dr. James Craigie, Toronto, Canada
Vice-President—Thomas Francis, Jr., M.D., Ann Arbor, Mich.
Secretary-Treasurer—Leland W. Parr, Ph.D., Washington, D. C.
Councilors—M. J. Rosenau, M.D., Chapel Hill, N. C., and Frederick Smith, M.B., Montreal, Que.

HEALTH EDUCATION WORKSHOP AT UNIVERSITY OF HAWAII

The popular workshop plan has been adopted for the University of Hawaii summer offerings in health education. The Honolulu Chamber of Commerce made a grant of $2,500 to the University to bring a mainland specialist to act as leader of a six weeks' intensive course during the 1946 summer session opening June 17.

It is planned to have the school health specialist from the mainland as the leader of the workshop, and to recruit personnel for group leaders from the various agencies in the Hawaiian Islands.

The purpose of the program is to focus community and school attention upon the importance of an adequate school health program, and also to provide school administrators and school health workers with an opportunity to study school health under competent leadership.

Registration is controlled by the University of Hawaii's admission policies, and the program is designed specifically for school principles, school health specialists, school health committee chairmen, school nurses, home economics teachers, and other personnel closely affiliated with the school health program.

In addition to the general sessions, which will feature general discussion, and papers by specialists in various

areas of health, there will be special interest groups. The subjects to be covered are: school health organization and administration, mental health, physical education in relation to health, home and community relations, atypical children (sight, hearing, physically handicapped), school nursing and first aid, foods and nutrition, curriculum and methods.

SPANISH EDITION OF CONTROL OF COMMUNICABLE DISEASES

The *Control of Communicable Diseases,* 6th Edition, has been translated into Spanish and is being widely distributed throughout the Latin American Republics by the Pan American Sanitary Bureau. The Association has a limited supply from which copies will be drawn for members of the Association who request them. Our friends south of the border may obtain them in quantity from the Pan American Sanitary Bureau, Washington, D. C.

VIRGINIA HEALTH COUNCIL FORMED

Representatives of 37 organizations interested in public health and medical care at a meeting in Richmond, Va., recently decided to establish a state-wide Health and Medical Care Council and named a committee to work out details of the organization. W. T. Sanger, LL.D., President of the Medical College of Virginia in Richmond, will serve as chairman of the committee.

PUBLIC HEALTH ASSOCIATION OF PUERTO RICO MEETING

The Public Health Association of Puerto Rico held its fifth annual meeting February 6 to 9 at the School of Tropical Medicine, San Juan. Among the speakers were: Dr. Milton J. Rosenau, Dr. John R. Heller, Jr., Dr. Julio Bustos, Margaret Merrell, Sc.D., and John M. Hepler, C.E. One session was addressed by Governor Rexford G. Tugwell, Hon. Luis Munoz Marin, President of the Senate, and Dr. Antonio Fernos Isern, Commissioner of Health of Puerto Rico.

LT. COL. WEINSTEIN, NEW YORK CITY'S ACTING HEALTH COMMISSIONER

The April *Journal* (p. 426) announced the resignation of Dr. Ernest L. Stebbins as Health Commissioner of New York and the appointment of Dr. Edward B. Bernecker as his successor. It also printed the resolution of protest adopted by the New York Academy of Medicine (p. 433).

On March 13 Dr. Bernecker resigned the post which he had held for nine days and was renamed as Commissioner of Hospitals, a position he had held since 1942. This action came after protests from the New York Academy of Medicine, the Board of Health, and numerous other organizations that Dr. Bernecker had insufficient public health training and experience, although he had been eminently successful as Hospital Commissioner.

Dr. Israel Weinstein, Deputy Commissioner, was named Acting Commissioner. He has been connected with the City Health Department since 1924, most recently as Director of the Bureau of Health Education. He served in both World Wars, in the late war with the 71st Division in France, Germany, and Austria. He was wounded in action, received the Purple Heart and Bronze Star, and was discharged with the rank of Lieutenant Colonel. He holds M.D. and Ph.D. degrees from Columbia University, and an Sc.D. from New York University where he taught preventive medicine for several years.

GREAT LAKES INSTITUTE

The sixteenth session of the Great Lakes Institute will be held at College Camp on Lake Geneva, Wisc., July 29 through August 2. The general subject of the Institute will be "Social Work and Social Tensions."

NEW INDIAN DEPARTMENT OF HEALTH

The government of India established on September 1 a Department of Agriculture, a Department of Health and a Department of Education in place of the existing single Department of Education, Health and Lands, it is reported. Sir Sardar Jogendra Singh, Minister in charge of the conjoint department in the Viceroy's Executive Council, will for the time being take charge of all 3 departments.

ANNUAL MEETING OF MISSOURI PUBLIC HEALTH ASSOCIATION POSTPONED

In a meeting of the Executive Council of the Missouri Public Health Association held in Jefferson City, Mo., on April 1, it was decided that the 1946 annual meeting of the Missouri Public Health Association would be postponed. It was also decided that an annual meeting of the Association would be held in the spring of 1947, the exact time and place to be determined by the Program Committee.

VETERANS RETURN TO DUTY WITH ILLINOIS DEPARTMENT OF PUBLIC HEALTH

During the month of March, the following veterans returned to duty with the Illinois Department of Public Health after service in the Armed Forces:

Frank M. Baker, M.D., of Highland Park, County Health Officer in the Division of Local Health Administration

John F. Shronts, M.D., of Momence, Chief of the Division of Industrial Hygiene

G. Howard Gowen, M.D., of Springfield, Chief of the Division of Cancer Control

STREPTOMYCIN FOR CIVILIANS

The March 15 *News Notes* of the Technical Information Division, Office of the Surgeon General, United States Army, reports details of a plan for a new streptomycin allocation program established by the Civilian Production Administration for making provision for civilian uses of the drug. The Army, Navy, Veterans Administration, and U. S. Public Health Service will also receive allocations.

Civilian distribution will be in charge of: Dr. Chester S. Keefer, Evans Memorial Hospital, 65 East Newton, Boston, Mass. All civilian requests and inquiries should be addressed to him. However, physicians are asked not to request streptomycin for cases that are susceptible to the action of sulfonamides, penicillin, and other therapeutic agents. There will for the present be no commercial distribution.

Dr. Keefer, who is Chairman of the Committee on Chemotherapeutic and Other Agents of the National Research Council's Division of Medical Sciences, and who headed the clinical investigation of penicillin, will be in charge of the clinical investigation of streptomycin. This is being carried on by grants-in-aid of $500,000 contributed in equal shares to the National Research Council by eleven pharmaceutical manufacturers.

The production of streptomycin was approximately 3,000 grams in September, 1945, and nearly 27,000 in March, 1946. Streptomycin, a companion drug to penicillin, is produced in a similar manner, by fermentation and chemical extraction, and, like penicillin requires carefully controlled conditions of temperature, air and sterility. It is expected to prove a valuable supplement in cases where infections do not respond to penicillin treatment, but studies have not yet advanced to the point where the methods of administration or the amenable diseases are definitely known.

ALASKA EXPANDS TUBERCULOSIS CONTROL

C. Earl Albrecht, M.D., Commissioner of Health of the Territory of Alaska, has announced the plans for the Territorial Department of Health growing out of an appropriation of $250,000

for tuberculosis control for 1946–1947 recently made by the Extraordinary Session of the Legislature called specifically for the purpose of considering this bill.

Dr. Albrecht points out that this tuberculosis control act was passed unanimously by both houses and provides that the Territorial Department of Health be given authority to arrange means by which all persons in Alaska may be x-rayed, to establish necessary out-patient clinics, to encourage and promote the establishment of adequate sanatorium facilities within the Territory, and care for patients with tuberculosis. It is also provided that the department may obtain surplus property useful to the carrying out of the program, may employ trained personnel, may pay the costs of care and incidental expenses for resident Alaskans, and temporary costs of care and transportation for nonresidents until such time as they can be transferred to the jurisdiction of their residence. The department may establish standards for the care of all persons receiving treatment under the act, make a survey of the various hospital facilities, and may establish as many tuberculosis wards in each hospital as may be deemed practical and advisable.

PERSONALS

Central States

WILLIAM Z. FLUCK has resumed his duties as engineer in the Industrial Hygiene Unit of the Wisconsin State Board of Health, following 2 years' work in industrial hygiene in the United States Army. He was one of the pioneers in the industrial hygiene program in Wisconsin, having helped organize the Division in 1936.

CHANGES IN HEALTH PERSONNEL IN KANSAS:

LEON BAUMAN, M.D., has been appointed full-time Health Officer of Labette County, succeeding OSCAR HARVEY, M.D.,† Parsons, who was transferred by the U. S. Public Health Service to Sioux Falls, So. Dak.

DONALD E. BUX, M.D., Manhattan, who was recently released from military service, has been named Health Officer of Cherokee County.

FERRIN B. MORELAND, PH.D., Iowa City, has been placed in charge of the Department of Chemistry, Division of Public Health Laboratories, Kansas State Board of Health.

RICHARD T. PAGE,* P.A. Sanitary Engineer, has been appointed Industrial Hygiene Consultant for U. S. Public Health Service District No. 7. Six of the 9 States in the District and 2 cities, St. Louis and Kansas City, have industrial hygiene units.

GEORGE A. POE, M.D., Port Clinton, O., is the new Health Commissioner of Ottawa County, O., succeeding ARTHUR B. REAM, M.D., of Batavia, who has resigned to engage in private practice.

LAWRENCE W. SMITH, M.D., is now associated with Commercial Solvents Corporation of Terre Haute, Ind., as Medical Director. Previously, Dr. Smith was Professor of Pathology at Temple University School of Medicine and Director of Laboratories at Temple University Hospital.

Eastern States

HARRISON S. COLLISI, M.D., who retired from the U. S. Army with the rank of Colonel in December, 1945, has become Medical Director of the Planned Parenthood Federation of America, Inc., effective March 4. As Commanding Officer of the 187th General Hospital at St. Quentin and

Mirecourt during the recent war, he received the Bronze Star for outstanding service.

ROGER A. CRANE has been appointed to the Directorship of the Commonwealth Fund's Division of Publications, following the death of PORTER R. LEE, JR. Mr. Crane has been Distribution Manager of the Division for about 15 years. He is succeeded in this position by ELIZABETH Q. PETERSON, who brings advertising experience to her new work.

MORTON L. LEVIN, M.D.,* former Assistant Director of the Division of Cancer Control of the New York State Department of Health, has been appointed provisionally to the position of Director. For the past 10 years, Dr. Levin has devoted himself exclusively to the medical, educational, and public health aspects of cancer control.

CHANGES IN HEALTH PERSONNEL IN MASSACHUSETTS:

JOHN J. POUTAS, M.D., M.P.H.,* has resumed his duties as Director of the Division of Local Health Administration in the Massachusetts Department of Public Health having returned from overseas duty in the European Theater. Prior to returning to this country, Lt. Col. Poutas served as Chief of the Epidemiology Branch of the Preventive Medicine Division in the Office of the Theater Chief Surgeon. His duties will include supervision of the 8 district offices of the department and the nursing, nutrition, social service and sanitation bureaus.

ROY F. FEEMSTER, M.D.,* recently Acting Director of the Division of Local Health Administration, Massachusetts Department of Public Health, has returned to his former position as Director of the Division of Communicable Disease.

DWIGHT J. MULFORD, PH.D., has been appointed Laboratory Chief of the Blood Processing Laboratory in the Division of Biologic Laboratories, Massachusetts Department of Public Health. This Laboratory is especially designed for the fractionation of blood plasma into albumin, immune serum globulin, fibrin foam, fibrin film and other fractions of value in medicine, surgery and public health.

OTTO C. YENS, M.D., has been appointed Supervisor in charge of Crippled Children Services in the Massachusetts Department of Public Health. Prior to his appointment, Dr. Yens held the rank of Lt. Colonel in the Medical Service of the 117th Evacuation Hospital, U. S. Army.

RUTH ALIDA THOMAS, M.A., C.P.H.,† has joined the staff of the Bureau of Health Information, Massachusetts Department of Public Health. Miss Thomas was formerly Assistant Professor in the Department of Hygiene and Bacteriology, Smith College. She has also served as Consultant in the Medical Intelligence Branch of the Preventive Medicine Division, Office of the Surgeon General, U. S. Army.

ALEXANDER A. ROBERTSON,† formerly Chief Sanitary Officer with the Newton Health Department, is now serving with the Massachusetts Department of Public Health as Supervising Health District Sanitary Officer.

JOHN B. SKINNER, M.S., has been appointed Director of the Division of Occupational Hygiene of the Massachusetts Department of Labor and Industries. Mr. Skinner has been an engineer with

* Fellow A.P.H.A.
† Member A.P.H.A.

the department since 1941. He succeeds MANFRED BOWDITCH,† who retired from State service to assume the position of Field Director of the Saranac Laboratory, Saranac Lake, N. Y.

ELNA I. PERKINS † has joined the staff of the Greenwich, Conn., Tuberculosis and Health Association as Health Education Director. She was formerly employed by the Industrial Hygiene Division of the U. S. Public Health Service, as Health Education Specialist.

M. J. PLISHNER * joined the staff of the New York Tuberculosis and Health Association on April 1, after 4 years of Army service. He was formerly associated with the Tuberculosis Associations in Passaic County, N. J., and Brooklyn, N. Y., as well as the National Tuberculosis Association.

JOHN B. SKINNER has been appointed Director of the Massachusetts Division of Occupational Hygiene. Mr. Skinner has been with the division for the last 5 years as engineer.

LEONID S. SNEGIREFF, M.D.,† Trenton, N. J., has been appointed Director of the Bureau of Preventable Diseases of the New Jersey State Department of Health. The new bureau includes divisions covering tuberculosis and venereal disease control, maternal and child health, preventive medicine, industrial and dental health and health education. Dr. Snegireff was formerly Medical Assistant in the Department of Health.

Southern States

ROBERT W. BALL, M.D.,* Columbia, S. C., recently released from the army, has returned to his position as Director of the Division of Maternal and Child Welfare of the South Carolina State Department of Health. HILLA SHERIFF, M.D.,* also of Columbia, who served as Director of the Division in the absence of Dr. Ball, will become Associate Director.

MAULDIN J. BOGGS, M.D.,† of Abbeville, S. C., who has been Health Officer of McCormick and Greenwood Counties with headquarters at Greenwood, has been appointed Health Officer for Abbeville County, with offices in Due West.

DAVID M. COWGILL, M.D.,* formerly Health Officer in Amarillo, Texas, has been appointed District Health Officer with the Alaska Territorial Department of Health, with offices in Anchorage.

C. B. DAVIS, M.D., designed February 1 as Director of the North Carolina Division of Industrial Hygiene to enter private practice in Wilmington, N. C. He has been succeeded by OTTO J. SWISHER, JR., M.D., who held the rank of Major, serving in the Pacific and in the European theaters. After graduation from the Medical School of Ohio State University in 1927, he served as a County Health Officer in Tennessee and Director of the Division of Industrial Hygiene in the State of West Virginia.

WILLIAM L. FLEMING, M.D.,† Research Professor of Syphilology of the University of North Carolina School of Public Health, Chapel Hill, since 1939, resigned on December 31, to become Chief of the Genito-infectious Clinic and Associate Professor of Medicine at the Boston University School of Medicine, Boston, effective January 1. HAROLD J. MAGNUSON, M.D., Baltimore, Passed Assistant Surgeon, U. S. Public Health Service, has been appointed Research Professor of Experimental Medicine in the School of Public Health, succeeding Dr. Fleming. Dr. Magnuson has been first assistant to HARRY EAGLE, M.D., in the Experimental

* Fellow A.P.H.A.
† Member A.P.H.A.

Syphilis Laboratories at Johns Hopkins University since 1943.

CHANGES IN HEALTH PERSONNEL IN FLORIDA:

THOMAS G. FAISON, M.D., recently released from the U. S. Army, has been appointed Director of the Bay County Health Department with headquarters at Panama City. Dr. Faison assumed his duties on January 28.

AUBREY Y. COVINGTON, M.D., has been appointed Director of the Bradford - Clay - Union County Health Unit on January 15, with headquarters at Starke. He was recently released from the United States Army.

C. M. SHARP, M.D., recently released from the U. S. Public Health Service, was appointed Director of the Bureau of Tuberculosis Control and assumed his duties on March 11.

E. G. GREEN,† Educational Director of the Oklahoma County Health Association, Oklahoma City, has been appointed Acting Executive Secretary of the Association. ARTHUR H. GERMAN,† who was Executive Secretary for 7 years, resigned to become consultant to the fund raising department of the Midwest Division of the American Red Cross with offices in St. Louis.

WILLIAM GROSSMAN, M.D.,* of Richmond, Va., Director of the Bureau of Communicable Disease Control, returned to the Virginia State Department of Health from military service as of January 1.

FREDERICK C. KLUTH, M.D.,† U. S. Public Health Service, who has served as Venereal Disease Control Officer for Charleston and Kanawha County for the past 3 years, has been transferred to Columbus, O., where he is in charge of a rapid treatment center.

COL. M. J. MACKLER, SN.C., A.U.S.,* has returned to his position as Director and Secretary-Treasurer of the Tampa, Fla., Housing Authority, after 4 years in the Army during which he served more than 2 years overseas in England, Ireland, Scotland and Germany.

EDWARD B. RICKEY, M.D., of Shafter, Tex., has been appointed Director of the Jim Wells-Duval County Health Unit with headquarters in Alice, Tex.

WALTER E. VEST, M.D., of Huntington, W. Va., at a meeting of the Public Health Council of West Virginia in Charleston, January 7, was reëlected President for a fifth consecutive 2 year term. He has been a member of the Council since 1933 and has served as its President since 1937.

CHANGES IN HEALTH PERSONNEL IN WEST VIRGINIA:

DON V. HATTON, M.D., Williamson, has been appointed by the Public Health Council as full-time County Health Officer for Mingo County. He succeeds SIXTUS G. BANDO, M.D., who is taking a course in public health at Johns Hopkins University, Baltimore.

CHARLES SCOTT MCKINLEY, M.D.,† Charleston, Director of the Bureau of Industrial Hygiene of the West Virginia State Health Department since May 1943, has resigned to accept appointment as Medical Director and Plant Physician for the Bakelite Company at Boundbrook, N. J., effective February 1.

LEOPOLD E. WEXBERG, M.D., New Orleans, La., has been appointed Chief of the Bureau of Mental Hygiene of the District of Columbia Health Department. Dr. Wexberg came to the United States in 1933

* Fellow A.P.H.A.
† Member A.P.H.A.

after 19 years of practice in Vienna. He succeeds JOHN F. OWEN, M.D., who resigned.

Western States

JULIUS B. ASKEW, M.D., on assignment to the California Department of Public Health by the U. S. Public Health Service, has been appointed Chief of a new Bureau of Hospital Inspections.

CHANGES IN CALIFORNIA STATE HEALTH DEPARTMENT STAFF:

MALCOLM H. MERRILL, M.D.,* San Francisco, has been appointed Deputy Director of the California Department of Public Health, continuing as Chief of the Division of Laboratories, a position he has held since 1941. Dr. Merrill joined the department in 1937 as Chief of the then newly formed Bureau of Venereal Diseases.

ROBERT DYAR, M.D.,* Stockton, recently released from the Army Air Force, is now Chief of the Division of Medical Services. Prior to his entering service in April, 1942, Dr. Dyar directed the joint syphilis epidemiologic study in the San Joaquin Local Health District, which was sponsored by the International Health Division of the Rockefeller Foundation, the Health District, and the State Department of Public Health.

PHILIP K. GILMAN, M.D., San Anselmo, President of the California Medical Association, has been appointed Chief of Hospital Surveys of the Department.

CHARLOTTE FERRY, Industrial Hygiene Nursing Consultant for the southern half of California, has taken a year's leave of absence to go to China with UNRRA as a Public Health Nursing Consultant.

CHARLES C. HEDGES, M.D., recently of Santa Rosa, Calif., has been appointed Director of the Bureau of Communicable Diseases in the West Virginia State Department of Health, Charleston, succeeding J. T. DUNCAN, M.D., who resigned several months ago.

HAROLD R. HENNESSY, M.D.,† of Los Angeles, Calif., has accepted an appointment as Assistant Secretary of the Council on Industrial Health, American Medical Association. During the past 5½ years he has been in the military service and associated with the army public health program. Prior to going overseas, he was Chief of Industrial Medicine, Headquarters Ninth Service Command. He spent 2 years in Europe during which period he was assigned to military government public health duties in England, France, Belgium, and Germany and held the rank of Lieutenant Colonel in the Medical Corps.

BYRON HUBBARD, Assistant Industrial Hygiene Chemist, has been transferred to Los Angeles to assume responsibility for the chemical analytical work in the new tri-unit industrial hygiene laboratory.

A. T. ROSSANO, JR.,† has been transferred from duty as Director of the Division of Industrial Hygiene in Colorado to assume Directorship of the Industrial Hygiene Division, Alabama State Health Department. ROBERT J. OWENS † has succeeded Mr. Rossano as Director of the Division, having returned from military leave of absence.

FRANK M. STEAD,* Senior Industrial Hygiene Engineer, has left the Bureau of Adult Health to become Chief of the Division of Environmental Sanitation of the California Department of Public Health.

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* Fellow A.P.H.A.
† Member A.P.H.A.

Foreign

MAJOR JOSEPH HIRSH,† Director of Medical Administration Service for the hospitals in New York State, Veterans Administration, 299 Broadway, New York, N. Y., recently returned from Italy where he was Chief Preventive Medicine and Staff Officer, Headquarters, 12th Air Force.

MAJOR MAX C. IGLOE, M.C., U. S. Army,† serving as Chief of Public Health Sub-Section, G-5 Section of the Headquarters Third Army, has received the Bronze Star Medal "for meritorious service during the period August 1, 1944, to May 8, 1945. The professional skill and resourcefulness he displayed, his loyal untiring devotion to duty, reflect great credit upon himself and the military service." Major Igloe was further honored in Paris in October by General Charles de Gaulle who awarded him the Croix de Guerre with Silver Star "for exceptional war services rendered during the liberation of France."

Death

WILLIAM DREYFUS, D.Sc.,† an authority on disinfectants and sanitation died March 13 at the age of 77. Dr. Dreyfus completed 40 years of A.P.H.A. membership in 1945 and recently received his 40 year Certificate. He was Director of the Chemical Dept. of the West Disinfecting Company of Long Island City, N. Y., one of the Sustaining Members of the Association. Born in Switzerland, where he studied at the Universities of Zurich and Geneva, he came here in 1899 after he had worked in the coal-tar distillation industry in England. Dr. Dreyfus was chiefly known in this country for his disinfectant standardization method, and it was as a result of his efforts that the hygienic laboratory method of testing disinfectants was adopted.

* Fellow A.P.H.A.
† Member A.P.H.A.

CONFERENCES AND DATES

American College of Physicians. Convention Hall, Philadelphia. May 13–17.

American Home Economics Association. Cleveland Public Auditorium, Cleveland, O. June 24–27.

American Medical Association. San Francisco, Calif. July 1–5.

American Public Health Association — 74th Annual Meeting. Cleveland, O. November 12–14.

American Water Works Association—1946 Conference. St. Louis, Mo. May 6–10.

Pacific Northwest Section—Gearhart Hotel, Gearhart, Ore. May 23–24.

National Conference on Social Work. Buffalo, N. Y. May 19–25.

National Education Association. Buffalo, N. Y. July 1–5.

National Probation Association. Buffalo, N. Y. May 17.

National Tuberculosis Association—Annual Meeting. Buffalo, N. Y. June 11–13.

New York State Association of Public Health Laboratories—Annual Meeting. State Laboratory, Albany, N. Y. May 17.

New York State Association of Health Officers and Public Health Nurses—Annual Conference. Grand Union Hotel, Saratoga Springs, N. Y. June 25.

Society of American Bacteriologists—1946 Annual Meeting. Hotel Book-Cadillac, Detroit, Mich. May 21–24.

Utah Public Health Association—Annual Meeting. Salt Lake City, Utah. May 31–June 1.

Publications of the A.P.H.A.

An Appraisal Method for Measuring the Quality of Housing: A Yardstick for Health Officers, Housing Officials and Planners. Part I. Nature and Uses of the Method. 1945. 71 pp. $1.00.

Basic Principles of Healthful Housing. 2nd ed., 1939. Report of the Committee on the Hygiene of Housing. 32 pp. $.25.

Community Organization for Health Education. Report of the Committee. Clair E. Turner, Chairman. 1941. 136 pp. Price, $.09.

Control of Communicable Diseases, The. 6th ed., 1945. Size 4¾" x 7¾". 149 pp. $.35.

Diagnostic Procedures and Reagents. Technics for the Laboratory Diagnosis and Control of the Communicable Diseases. 2nd ed., 1945. $4.00.

Health Practice Indices. A collection of charts showing the range of accomplishment in various fields of community health service. 1945. 87 pp. Free.

Methods for Determining Lead in Air and in Biological Materials. 1944. 41 pp. $.75.

Occupational Lead Exposure and Lead Poisoning. 1943. 67 pp. $.75.

Panum on Measles. By P. L. Panum (translation from the Danish). Delta Omega ed., 1940. 111 pp. $2.50.

Shellfish and Shellfish Waters, Recommended Methods of Procedure for Bacteriological Examination of. 1944. 12 pp. $.25.

Spanish Summary of 8th edition (1941) of Standard Methods for the Examination of Dairy Products. 1945. 52 pp. Free to Latin American countries. $.10 in the United States.

Standard Methods for the Examination of Dairy Products—Microbiological, Bioassay and Chemical. 8th ed., 1941. 288 pp. Paper, $1.75.

Survey Form for Milk Laboratories. Indicating Conformity with Standard Methods for the Examination of Dairy Products (8th ed.). May, 1944. Single copies 10¢; 50 copies $1.00; 100 copies $1.50; 1,000 copies $10.00.

Swimming Pools and Other Public Bathing Places, Recommended Practice for Design, Equipment and Operation of. 1942. 56 pp. $.50.

Transactions of the Eighth Institute on Public Health Education (1941). 1942. $1.50.

Vital Statistics Directory. Compiled by the Vital Statistics Section. 3d ed., 1945. $.75.

Reprints from the American Journal of Public Health

Changing Challenges of Public Health. C.-E. A Winslow. [March, 1945.] 8 pp. 15c.

Content and Administration of a Medical Care Program. Six explanatory papers by Joseph W. Mountin, I. S. Falk, Nathan Sinai, J. Roy Hege, Graham L. Davis, George St. J. Perrott, and the Official Statement on Medical Care in a National Health Program. [December, 1944.] 40 pp. 25c.

Desirable Minimum Functions and Organization Principles for Health Activities. An official Declaration of the American Public Health Association. [1943.] 12 pp. Single copies free. Three or more copies 5c each.

The Evolving Pattern of Tomorrow's Health: JOSEPH W. MOUNTIN, C.-E. A. WINSLOW, HENRY F. VAUGHAN, and REGINALD M. ATWATER. [December, 1943.] 24 pp. 25c.

How to Find What Health Education Materials You're Looking For. [Aug., 1944.] 4 pp. 10c.

Improvement of Local Housing Regulation Under the Law. [Nov., 1942.] 16 pp. 25c.

Laboratory Methods Used in Determining the Value of Sulfadiazine as a Mass Prophylactic Against Meningococcic Infections. By COLONEL DWIGHT M KUHNS, M.C., USA, and CAPTAIN HARRY A. FELDMAN, M.C., AUS. [December, 1943.] 8 pp. 10c.

Landmarks of 1944. Six papers by Abel Wolman, Wilton L. Halverson, William P. Shepard, Hugh R. Leavell, C.-E. A. Winslow, Louis I. Dublin. [January, 1945.] 28 pp. 25c.

Medical Care in a National Health Program. An Official Statement of the American Public Health Association Adopted October 4, 1944. [December, 1944.] 6 pp. Single copies free. Five or more copies 5c each.

Protection of Water and Food Supplies in An Emergency. G. E. ARNOLD. [Oct., 1942.] 8 pp. 15c.

Pyrex Suspensions in Turbidimetric and Colorimetric Determinations: Standards of Comparison for Bacterial Suspensions and in the Resazurin Test. By FRANCIS J. HALLINAN. [February, 1943.] 4 pp. 10c.

Public Health as an International Problem. By RAYMOND B. FOSDICK. [Nov., 1944.] 8 pp. Single copies free. Five or more copies 5c each.

Surveys of the Nutrition of Populations: Description of the Population, General Methods and Procedures, and the Findings in Respect to the Energy Principle (Calories) in a Rural Population in Middle Tennessee. JOHN B. YOUMANS, E. WHITE PATTON, and RUTH KERN. [December, 1942 and January, 1943.] 24 pp. Uncovered 20c, covered 25c.

Typhoid Vaccine Studies: Revaccination and Duration of Immunity. By DON LONGFELLOW and GEORGE F. LUIPPOLD. [Nov., 1940.] 7 pp. 15c.

Ventilation and Atmospheric Pollution. E. R. HAYHURST, Chairman. [July, 1943.] 7 pp. 15c.

Vitamin B Complex. II. Status of Assay Methods and Need of These Substances by Man. (Report of the Committee on Assay of Foods.) [July, 1944.] 12 pp. 25c.

For Free Distribution Bibliography on Public Health and Allied Subjects, 1945 (23rd Ed.). 28 pp. Brief Description of the American Public Health Association.

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